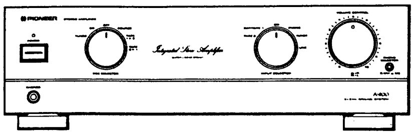
PIONEER®
The future of sound and vision.

Service Manual


The illustration shows model A-400.

ORDER NO.
ARP2044

STEREO AMPLIFIER

A-400
A-300

MODEL A-400 AND A-300 HAVE FOLLOWING VERSIONS:

Type	Applicable model		Power requirement	Export destination
	A-400	A-300		
HB	○	○	AC220V, 240V (switchable) *	United Kingdom

* Change the connection of the power transformer lead wire.

- **This manual is applicable to the A-400/HB and A-300/HB types.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

CONTENTS

1. SPECIFICATIONS 2
2. EXPLODED VIEWS, PACKING AND PARTS LIST 3
3. SCHEMATIC DIAGRAM (FOR A-400/HB TYPE) 7
4. P.C. BOARDS CONNECTION DIAGRAM (FOR A-400/HB TYPE) 11
5. P.C. BOARDS CONNECTION DIAGRAM (FOR A-300/HB TYPE) 17
6. SCHEMATIC DIAGRAM (FOR A-300/HB TYPE) 23
7. ELECTRICAL PARTS LIST 27
8. ADJUSTMENTS 31
8. RÉGLAGE 32
8. AJUSTE 33
9. FRONT PANEL FACILITIES 34

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

© PIONEER ELECTRONIC CORPORATION 1990

SEV MAY. 1990 Printed in Japan

1. SPECIFICATIONS

[A-400]

Amplifier Section

Continuous power output (both channels driven at 20 Hz to 20 kHz)*	
T.H.D. 0.03 %, 8 Ω	50 W + 50 W
T.H.D. 0.05 %, 4 Ω	70 W + 70 W
DIN Continuous power output (both channels driven at 1 kHz)	
T.H.D. 1.0 %, 8 Ω	60 W + 60 W
T.H.D. 1.0 %, 4 Ω	85 W + 85 W
Dynamic power output (on EIA dynamic test signal)	
8 Ω/4 Ω/2 Ω	70 W/100 W/135 W
Total harmonic distortion *	
20 Hz to 20 kHz, 50 W, 8 Ω	0.03 %
20 Hz to 20 kHz, 70 W, 8 Ω	0.05 %
Input sensitivity/impedance	
PHONO (MM)	2.5 mV/50 kΩ
PHONO (MC)	0.2 mV/100 Ω
CD, TUNER, LINE, TAPE	150 mV/50 kΩ
PHONO overload level	
1 kHz, T.H.D. 0.008 % (MM/MC)	150 mV/12 mV
Output level/impedance	
TAPE REC	150 mV/2.2 kΩ
Frequency response	
PHONO (MM)	20 Hz to 20 kHz, ± 0.3 dB
PHONO (MC)	20 Hz to 20 kHz, ± 0.5 dB
CD, TUNER, LINE, TAPE	5 Hz to 100 kHz, $^{+0}_{-3}$ dB
Signal-to-Noise ratio (IHF short circuit, A network)	
PHONO (MM, 2.5 mV input/MC, 0.2 mV input)	87 dB/69 dB
CD, TUNER, LINE, TAPE	108 dB
Signal-to-Noise ratio (DIN, continuous power/50 mW)	
PHONO (MM)	74 dB/63 dB
CD, TUNER, LINE, TAPE	88 dB/65 dB

Power Supply/Miscellaneous

Power requirements	a.c. 240 V ~, 50/60 Hz
Power consumption	520 W
Dimensions	420 (W) x 352 (D) x 126 (H) mm
Weight (without package)	8.0 kg

Accessories

Operating instructions	1

- *Specificatios and design subject to possible modification without notice, due to improvements.*

** Measured by Audio Spectrum Analyzer.*

[A-300]

Amplifier Section

Continuous power output (both channels driven at 20 Hz to 20 kHz)*	
T.H.D. 0.03 %, 8 Ω	30 W + 30 W
T.H.D. 0.05 %, 4 Ω	40 W + 40 W
DIN Continuous power output (both channels driven at 1 kHz)	
T.H.D. 1.0 %, 8 Ω	40 W + 40 W
T.H.D. 1.0 %, 4 Ω	60 W + 60 W
Dynamic power output (on EIA dynamic test signal)	
8 Ω/4 Ω/2 Ω	50 W/75 W/90 W
Total harmonic distortion *	
20 Hz to 20 kHz, 40 W, 8 Ω	0.03 %
20 Hz to 20 kHz, 50 W, 8 Ω	0.05 %
Input sensitivity/impedance	
PHONO (MM)	2.5 mV/50 kΩ
CD, TUNER, LINE, TAPE	150 mV/50 kΩ
PHONO overload level	
1 kHz, T.H.D. 0.02 % (MM)	150 mV
Output level/impedance	
TAPE REC	150 mV/2.2 kΩ
Frequency response	
PHONO (MM)	20 Hz to 20 kHz, ± 0.3 dB
CD, TUNER, LINE, TAPE	5 Hz to 100 kHz, $^{+0}_{-3}$ dB
Signal-to-Noise ratio (IHF short circuit, A network)	
PHONO (MM, 2.5 mV input)	83 dB
CD, TUNER, LINE, TAPE	108 dB
Signal-to-Noise ratio (DIN, continuous power/50 mW)	
PHONO (MM)	73 dB/63 dB
CD, TUNER, LINE, TAPE	88 dB/65 dB

Power Supply/Miscellaneous

Power requirements	a.c. 240 V ~, 50/60 Hz
Power consumption	410 W
Dimensions	420 (W) x 352 (D) x 126 (H) mm
Weight (without package)	6.8 kg

Accessories

Operating instructions	1

- *Specificatios and design subject to possible modification without notice, due to improvements.*

** Measured by Audio Spectrum Analyzer.*

2. EXPLODED VIEWS, PACKING AND PARTS LIST

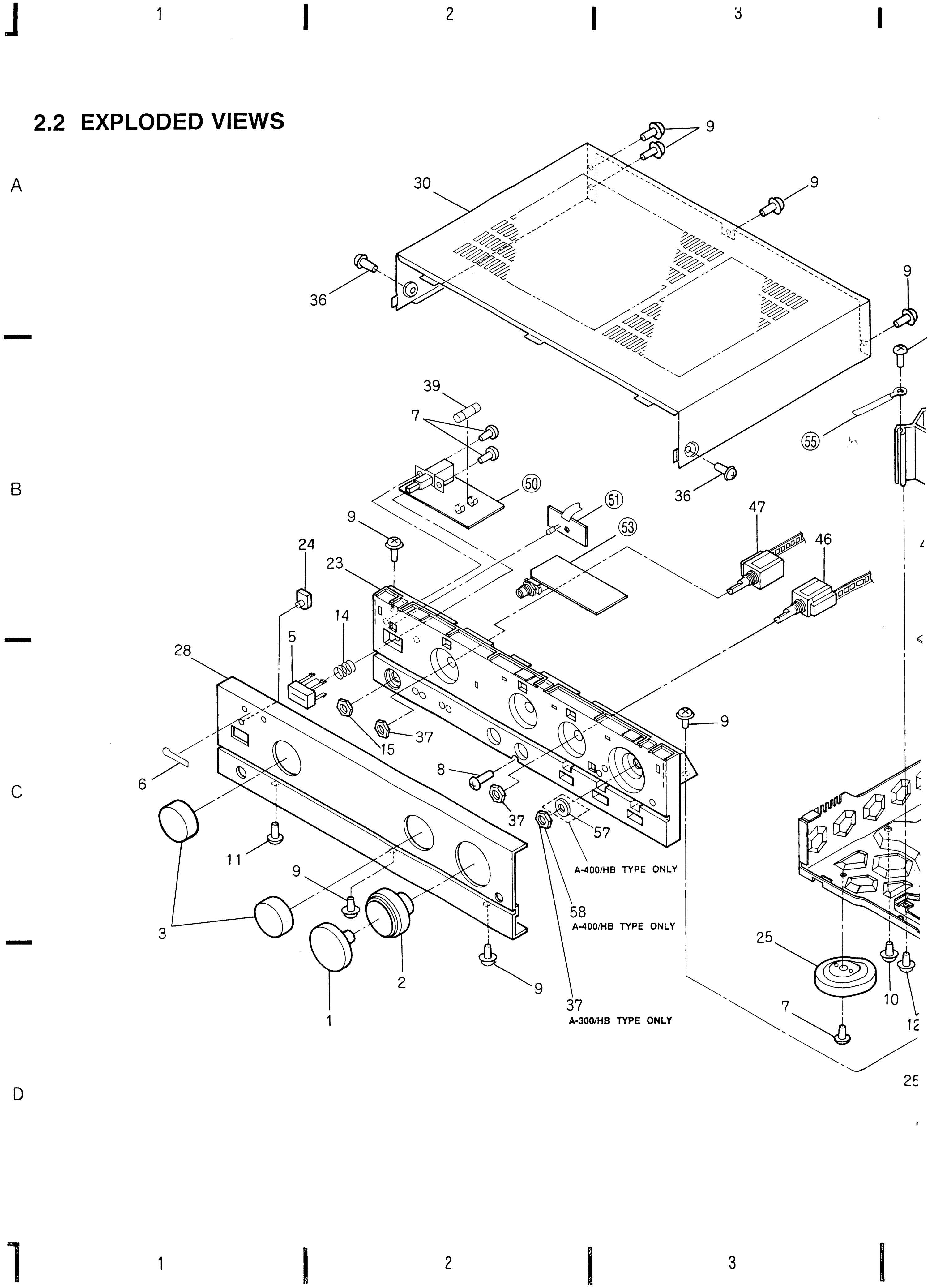
NOTES:

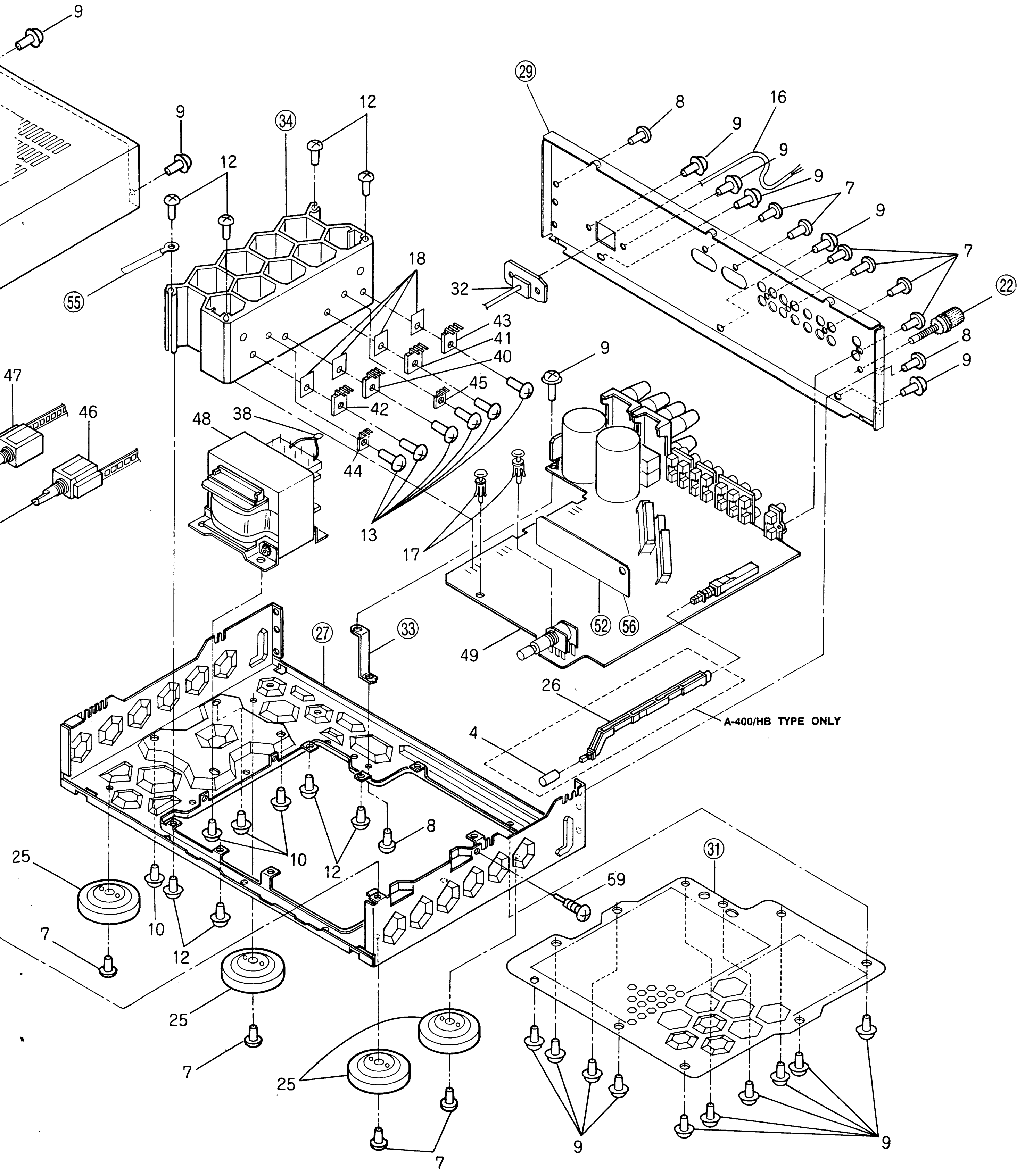
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

2.1 PARTS LIST

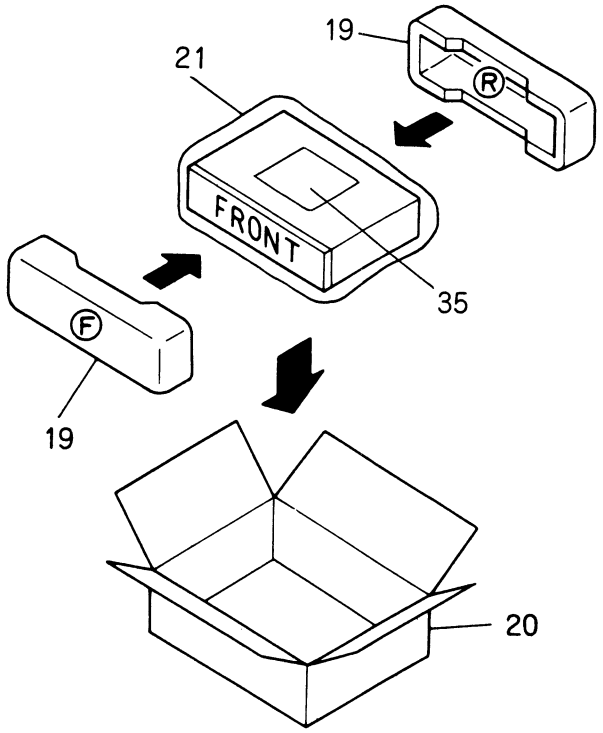
Mark	No.	Description	Parts No.
	1	ROTARY KNOB L (PLS)	AAB1160
	2	ROTARY KNOB R (PLS)	AAB1162
	3	ROTARY KNOB M (PLS)	AAB1164
	4	PUSH KNOB C (A-400/HB TYPE ONLY)	AAD1366
	5	KNOB (POWER)	AAD1535
	6	NAME PLATE (METAL)	AAM1029
	7	SCREW	ABA-298
	8	SCREW (STEEL)	ABA1009
	9	SCREW (STEEL)	ABA1011
	10	SCREW (STEEL)	ABA1016
	11	SCREW (STEEL)	ABA1048
	12	SCREW (STEEL)	ABA1050
	13	SCREW	ABA1082
	14	SPRING	ABH-052
	15	NUT	ABN-065
⚠	16	AC POWER CORD	ADG1070
	17	RIVET	AEC-441
	18	SHEET	AEE1014
	19	STYROL PROTECTOR	AHA1335
	20	PACKING CASE (FOR A-400/HB TYPE)	AHD1865
		PACKING CASE (FOR A-300/HB TYPE)	AHD1866
	21	COVER SHEET	AHG1016
	22	TERMINAL SCREW	
	23	PANEL BASE	AMB1651
	24	INDICATING LENS	AMR1160
	25	INSULATOR ASS'Y	AMR2140
	26	ARM (A-400/HB TYPE ONLY)	AMR2142
	27	CHASSIS	
	28	FRONT PANEL (FOR A-400/HB TYPE)	ANB1399
		FRONT PANEL (FOR A-300/HB TYPE)	ANB1400
	29	REAR PANEL	
	30	METAL BONNET	AZN1799
	31	BOTTOM PLATE	
	32	AC CORD SPACER	ANG1153
	33	P.C.B HOLDER	
	34	HEAT SINK	
	35	OPERATING INSTRUCTIONS (E)	ARB1247
	36	SCREW	BBT30P060FZK
	37	NUTS (A-300/HB TYPE ONLY)	NK90FZB
	38	C1 CAPACITOR (FOR A-400/HB TYPE)	CQMXA104J100
		C1 CAPACITOR (FOR A-300/HB TYPE)	CQMXA473J100
⚠	39	FU1 FUSE(T2.5A) (FOR A-400/HB TYPE)	AEK-512
⚠		FU1 FUSE(T1.6A) (FOR A-300/HB TYPE)	AEK-510
⚠	40	Q1 TRANSISTOR (FOR A-400/HB TYPE)	2SC3281
⚠		Q1 TRANSISTOR (FOR A-300/HB TYPE)	2SC3181N
⚠	41	Q2 TRANSISTOR (FOR A-400/HB TYPE)	2SC3281
⚠		Q2 TRANSISTOR (FOR A-300/HB TYPE)	2SC3181N
⚠	42	Q3 TRANSISTOR (FOR A-400/HB TYPE)	2SA1302
⚠		Q3 TRNSISTOR (FOR A-300/HB TYPE)	2SA1264N
⚠	43	Q4 TRANSISTOR (FOR A-400/HB TYPE)	2SA1302
⚠		Q4 TRANSISTOR (FOR A-300/HB TYPE)	2SA1264N
⚠	44	Q5 TRANSISTOR	2SC4137
⚠	45	Q6 TRANSISTOR	2SC4137
	46	S1 SWITCH	ASU1035
	47	S2 SWITCH	ASU1037
⚠	48	T1 POWER TRANSFORMER (FOR A-400/HB TYPE)	ATS1279
⚠		T1 POWER TRANSFORMER (FOR A-300/HB TYPE)	ATS1278
	49	AF COMPLEX ASS'Y (FOR A-400/HB TYPE)	AWZ2868
		AF COMPLEX ASS'Y (FOR A-300/HB TYPE)	AWZ2870
	50	POWER SW ASS'Y	
	51	LED ASS'Y	
	52	SHIELD ASS'Y (FOR A-400/HB TYPE)	
	53	HEADPHONE ASS'Y	
	54	- - - - - - - - - - - - -	
	55	BINDER	
	56	SHIELD ASS'Y (FOR A-300/HB TYPE)	
	57	WASHER (A-400/HB TYPE ONLY)	ABE1018
	58	NUTS (A-400/HB TYPE ONLY)	NK90FCU
	59	GND SCREW	ABA1047

2.2 EXPLODED VIEWS

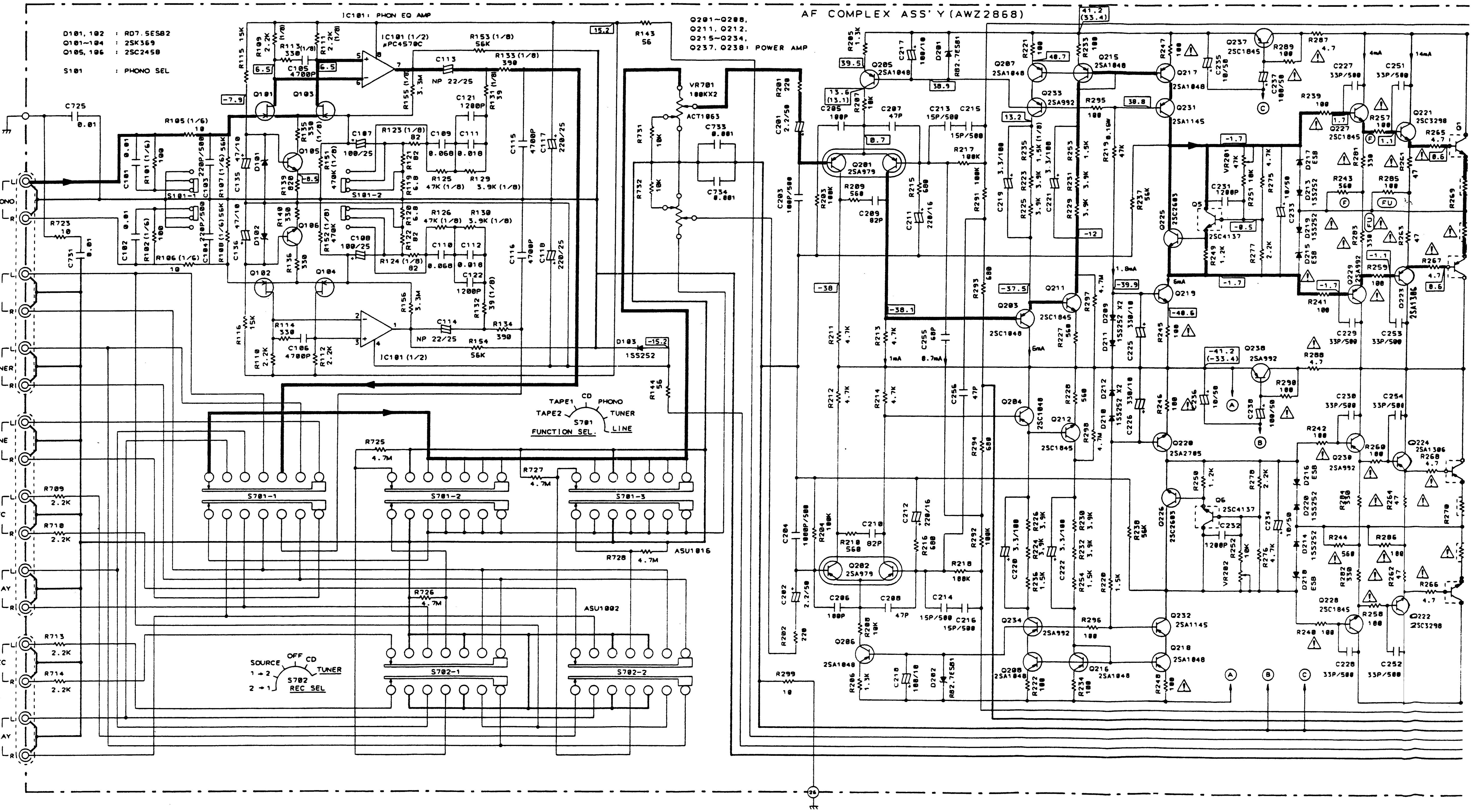


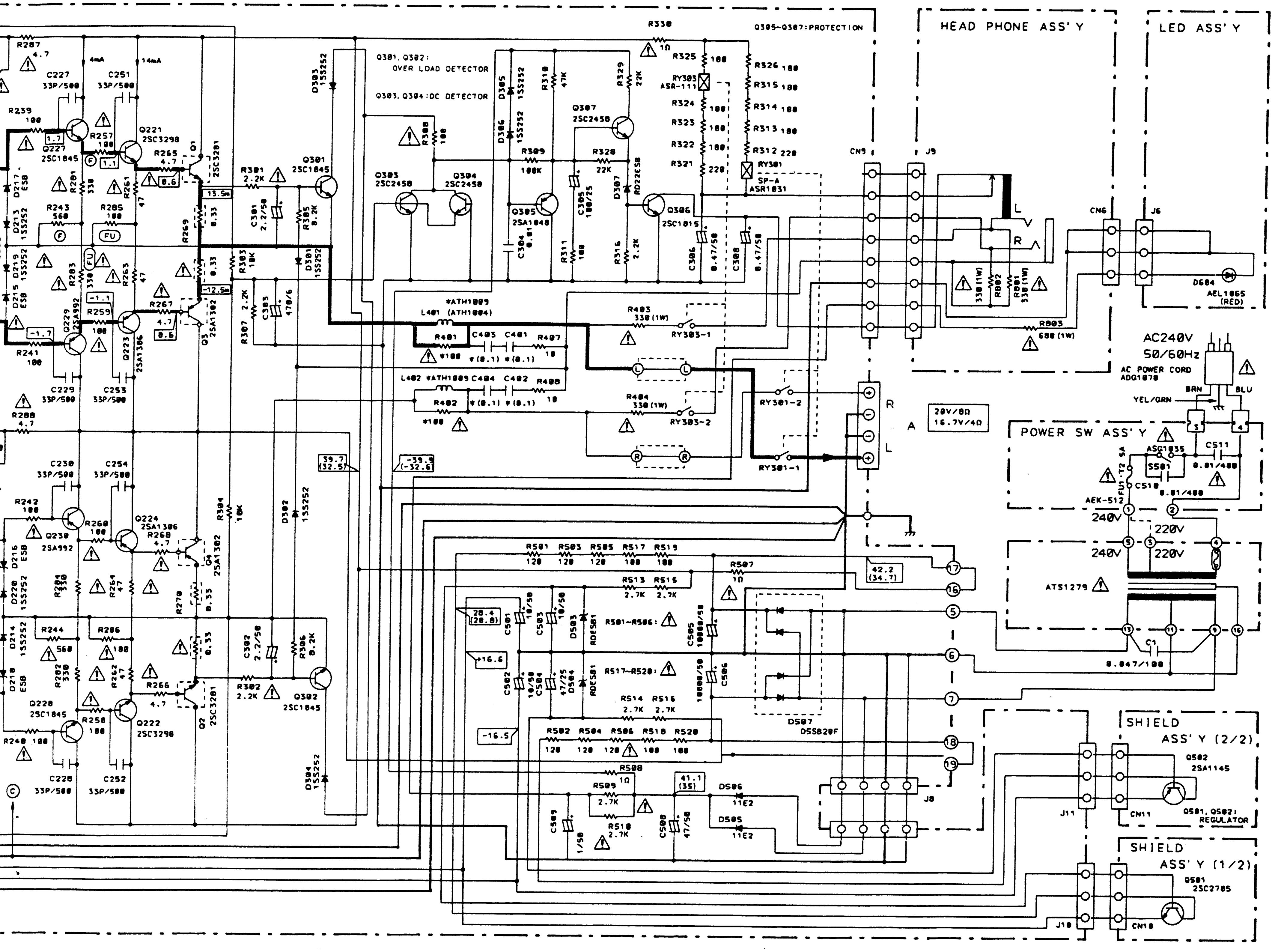

㉞
(55)
㉙
㉒
(52)
(56)
㉗
㉝
A-400/HB TYPE ONLY
㉛

2.3 PACKING


Ⓡ
FRONT
Ⓕ

3. SCHEMATIC DIAGRAM (FOR A-400/HB TYPE)


1
2
3
4
5
6
7
A
B
C
D
AF COMPLEX ASS'Y (AWZ2868)
IC101: PHON EQ AMP
D101, 102 : RD7.5ESB2
Q101~104 : 2SK369
Q105, 106 : 2SC2458
S101 : PHONO SEL
IC101 (1/2) μPC4570C
Q201~Q208, Q211, Q212, Q215~Q234, Q237, Q238: POWER AMP
MM2.5mV MC0.2mV
PHONO
CD
TUNER
LINE
150mV
REC
TAPE1
PLAY
TAPE2
S101-1
S101-2
VR701 100KX2
ACT1063
S701-1
S701-2
S701-3
S702-1
S702-2
S701 FUNCTION SEL.
TAPE1
TAPE2
CD
PHONO
TUNER
LINE
S702 REC SEL
SOURCE
1→2
2→1
OFF
CD
TUNER
ASU1016
ASU1002
R725 4.7M
R726 4.7M
R727 4.7M
R728 4.7M
Q201 2SA979
Q202 2SA979
Q203 2SC1848
Q204 2SC1848
Q205 2SA1048
Q206 2SA1048
Q207 2SA1048
Q208 2SA1048
Q211 2SC1845
Q212 2SC1845
Q215 2SA1048
Q216 2SA1048
Q217 2SA1048
Q218 2SA1048
Q219
Q220 2SA2705
Q221 2SC3298
Q222 2SC3298
Q223 2SA1306
Q224 2SA1306
Q225 2SC2603
Q226 2SC2603
Q227 2SC1845
Q228 2SC1845
Q229 2SA992
Q230 2SA992
Q231 2SA1145
Q232 2SA1145
Q233 2SA992
Q234 2SA992
Q237 2SC1845
Q238 2SA992
Q5 2SC4137
Q6 2SC4137
D201 RB2.7ESB1
D202 RB2.7ESB1
D103 1SS252
VR201 47K
VR202 10K
41.2 (33.4)
-41.2 (-33.4)
15.2
-15.2
6.5
-7.9
-8.5
39.5
13.6 (13.1)
0.7
38.9
13.2
40.7
38.8
-1.7
-0.5
-12
-37.5
-38
-38.1
-39.9
-40.6
1.7
1.1
0.6
-1.1
1mA
0.7mA
6mA
1.8mA
4mA
14mA


Q305–Q307: PROTECTION
Q301, Q302: OVER LOAD DETECTOR
Q303, Q304: DC DETECTOR
HEAD PHONE ASS'Y
LED ASS'Y
POWER SW ASS'Y
SHIELD ASS'Y (2/2)
SHIELD ASS'Y (1/2)
Q502 2SA1145
Q501, Q502: REGULATOR
Q501 2SC2785
AC240V 50/60Hz
AC POWER CORD ADG1070
BRN
BLU
YEL/GRN
ASG1035
S501
C511 0.01/400
C510 0.01/400
AEK-512
FU1 T2.5A
240V
220V
ATS1279
C1 0.047/100
D604 AEL1065 (RED)
R803 680 (1W)
R801 330 (1W)
R802 330 (1W)
CN9
J9
CN6
J6
J8
J11
CN11
J10
CN10
RY301-1
RY301-2
RY303-1
RY303-2
RY303 ASR-111
RY301 SP-A ASR1031
R330 1Ω
R325 100
R326 100
R315 100
R314 100
R313 100
R312 220
R324 100
R323 100
R322 100
R321 220
Q307 2SC2458
Q306 2SC1815
Q305 2SA1048
Q303 2SC2458
Q304 2SC2458
Q301 2SC1845
Q302 2SC1845
D303 1SS252
D304 1SS252
D305 1SS252
D306 1SS252
D307 RD22ESB
D301 1SS252
D302 1SS252
R310 47K
R329 22K
R309 100K
R328 22K
R308 100
R311 100
R316 2.2K
R301 2.2K
R302 2.2K
R303 10K
R304 10K
R305 8.2K
R306 8.2K
R307 2.2K
C301 2.2/50
C302 2.2/50
C303 470/6
C304 0.01
C305 100/25
C306 0.47/50
C308 0.47/50
L401 (ATH1004) *ATH1009
L402 *ATH1009
R401 *100
R402 *100
C403 *(0.1)
C401 *(0.1)
C404 *(0.1)
C402 *(0.1)
R407 10
R408 10
R403 330 (1W)
R404 330 (1W)
L
R
A
20V/8Ω 16.7V/4Ω
39.7 (32.5)
-39.9 (-32.6)
42.2 (34.7)
28.4 (28.8)
+16.6
-16.5
41.1 (35)
R501 120
R503 120
R505 120
R517 100
R519 100
R513 2.7K
R515 2.7K
R514 2.7K
R516 2.7K
R502 120
R504 120
R506 120
R518 100
R520 100
R501–R506:
R517–R520:
R507 1Ω
R508 1Ω
R509 2.7K
R510 2.7K
C501 10/50
C503 10/50
C502 10/50
C504 10/50
C505 10000/50
C506 10000/50
C509 1/50
C508 47/50
D503 RD5E81
D504 47/25 RD5E81
D507 D5SB20F
D506 11E2
D505 11E2
R287 4.7
C227 33P/500
C251 33P/500
R239 100
Q227 2SC1845
R257 100
Q221 2SC3298
R265 4.7
Q1 2SC3281
R243 560
R285 100
R261 47
R201 330
R269
D213 1SS252
D217 ES8
D219 1SS252
D215 ES8
R283 330
R263 47
Q229 2SA992
R259 100
R267 4.7
Q223 2SA1306
Q3 2SA1302
R241 100
C229 33P/500
C253 33P/500
R288 4.7
C230 33P/500
C254 33P/500
R242 100
R260 100
Q230 2SA992
Q224 2SA1306
R268 4.7
Q4 2SA1302
D216 ES8
D220 1SS252
R284 330
R264 47
R270
R244 560
R286 100
D214 1SS252
D218 ES8
R282 330
R262 47
R266 4.7
Q2 2SC3281
Q228 2SC1845
R258 100
Q222 2SC3298
R240 100
C228 33P/500
C252 33P/500
4mA
14mA
1.7
1.1
0.6
13.5m
-12.5m
-1.1
-1.7
0.6
0.33
A
B
C
D

1. **RESISTORS:**
   Indicated in Ω, 1/8, 1/4W, ±5% tolerance unless otherwise noted K; kΩ, M; MΩ, (F); ±1%, (G); ±2%, (K); ±10%, (M); ±20% tolerance.

2. **CAPACITORS:**
   Indicated in capacity (µF) / voltage (V) unless otherwise noted p; pF. Indication without voltage is 50V except electrolytic capacitor.

3. **VOLTAGE CURRENT:**

V	;	Signal voltage at (50W + 50W/8Ω, 70W + 70W/4Ω) output (1kHz).
	;	DC voltage (V) at no input signal. Value in ( ) is DC voltage at rated power.
mA	;	DC current (V) at no input signal.
mV	;	Signal voltage at FM 400Hz ± 75Hz DEV.

4. **OTHERS**
   - ←; Signal route.
   - ⊘ ; Adjusting point.
   - The ※ mark found on some component parts indicates the importane of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   - ⚠marked capacitor and resistor have parts number.
   - This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. **SWITCHES (The underline indicates the switch position)**

S501 : POWER SW (ON-OFF)
S101 : PHONO SEL MM/MC
S701 : FUNCTION SEL (TAPE 2 – TAPE 1 – CD – PHONO – TUNER – LINE)
S702 : REC SEL (2→1 – 1→2 – SOURCE – OFF – CD – TUNER)

Line Voltage Selection

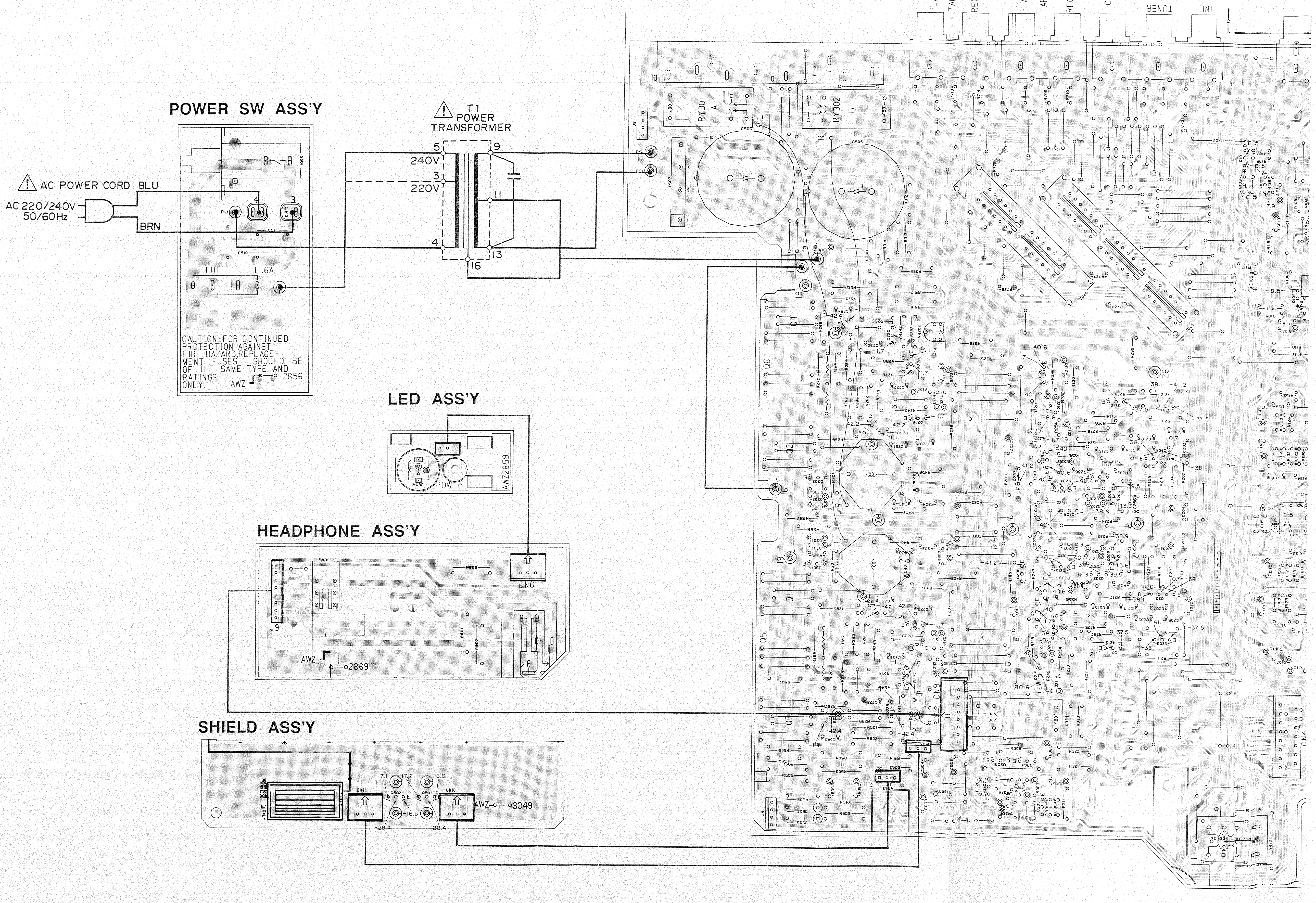
Line voltage can be changed with following steps.

1. Disconnect the AC power cord.
2. Remove the Bonnet case.
3. Change the connection of the power transformer lead wire.
4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX-193	220V label
AAX-192	240V label

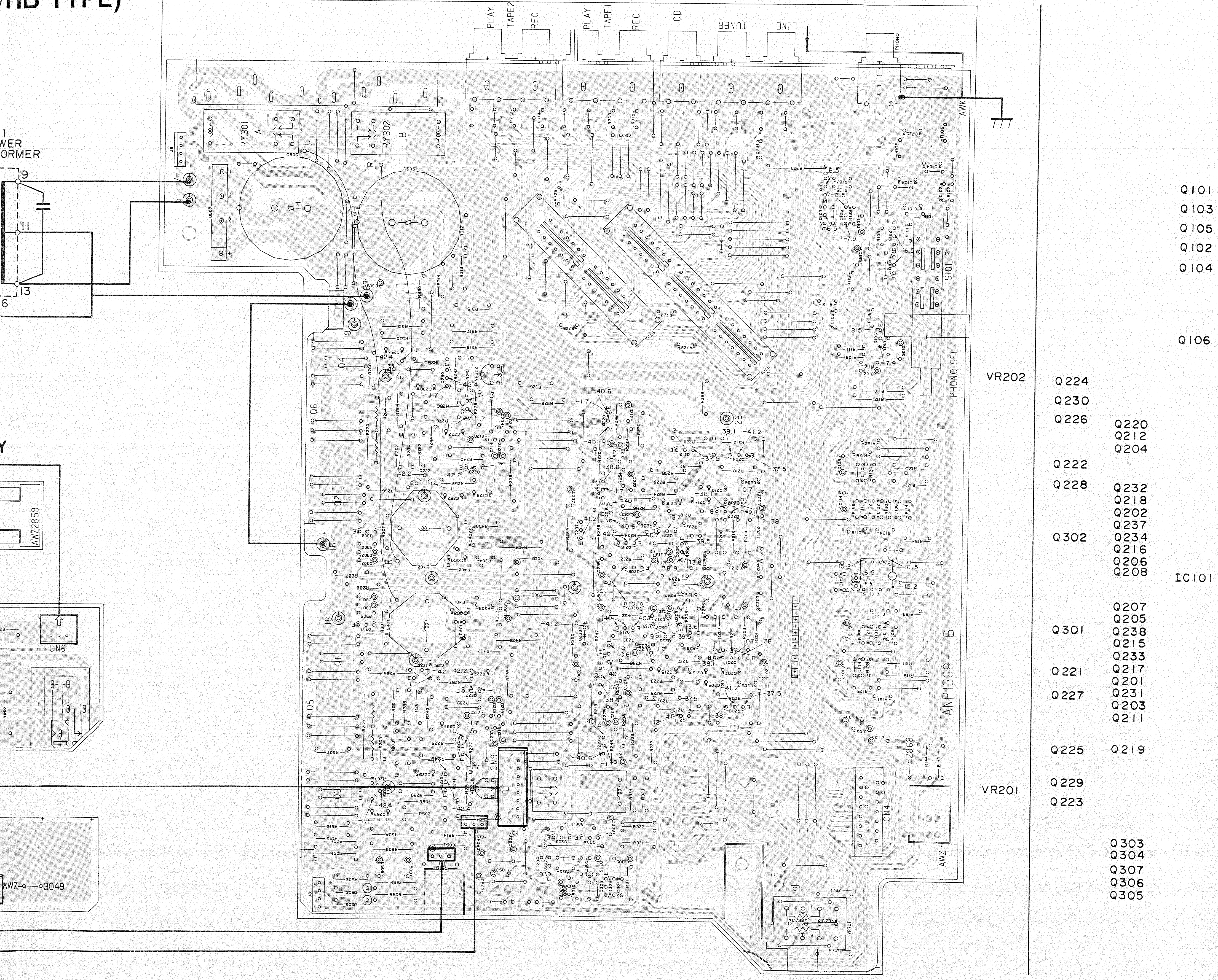
----- 220V
—— 240V

4. P.C. BOARDS CONNECTION DIAGRAM (FOR A-400/HB TYPE)


AF COMPLEX ASS'Y (AWZ2868)
PLAY
TAPE2
REC
PLAY
TAPE1
REC
CD
TUNER
LINE
RY301
A
RY302
B
L
R
POWER SW ASS'Y
AC POWER CORD
BLU
BRN
AC 220/240V
50/60Hz
FU1
T1.6A
CAUTION-FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
AWZ 2856
T1
POWER
TRANSFORMER
5
240V
3
220V
4
9
11
13
16
LED ASS'Y
AWZ2859
POWER
HEADPHONE ASS'Y
J9
CN6
AWZ 2869
SHIELD ASS'Y
CN11
CN10
AWZ 3049
CN3
CN4
-40.6
-41.2
-38.1
-37.5
42.2
42.4
28.4
-17.1
17.2
16.6
-16.5
A
B
C
D
1
2
3
4
5
6

/HB TYPE)

AF COMPLEX ASS'Y (AWZ2868)


PLAY
TAPE2
REC
PLAY
TAPE1
REC
CD
TUNER
LINE
PHONO
AWK
1
WER
ORMER
9
11
13
6
RY301
RY302
S101
PHONO SEL
ANP1368-B
CN9
CN4
CN6
AWZ2859
AWZ-o-o3049
Y
Q101
Q103
Q105
Q102
Q104
Q106
VR202
Q224
Q230
Q226
Q220
Q212
Q204
Q222
Q228
Q232
Q218
Q202
Q237
Q234
Q216
Q206
Q208
Q302
IC101
Q207
Q205
Q238
Q215
Q233
Q217
Q201
Q231
Q203
Q211
Q301
Q221
Q227
Q225
Q219
VR201
Q229
Q223
Q303
Q304
Q307
Q306
Q305

1. This P.C.B connection diagram is seen from the parts mount side.
2. The parts mounted on to the P.C.B can be replaced with those shown in the following correspondence table with wiring marks.

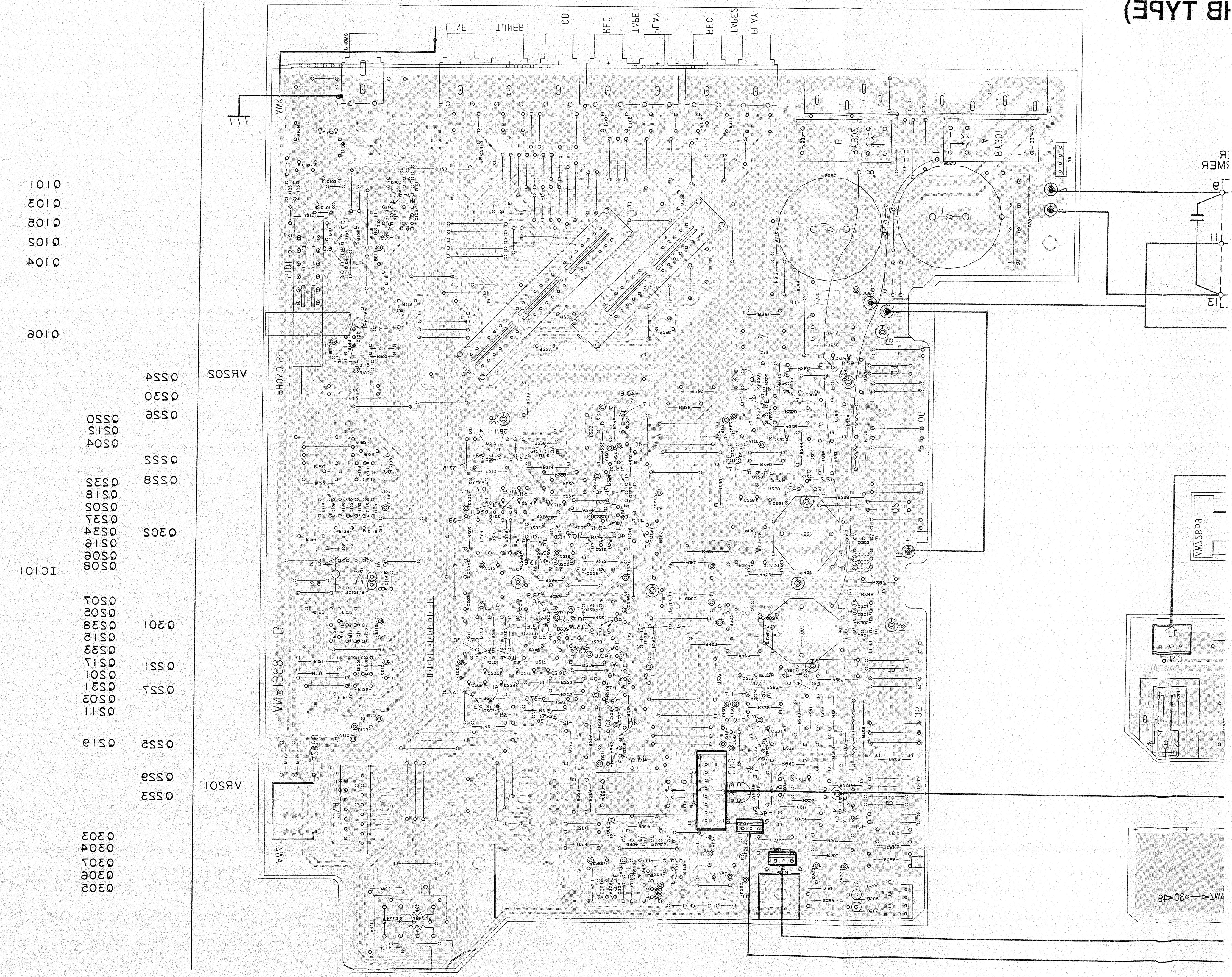
Indication of the P.C.B. pattern	Symbol of corresponding parts	Parts name
Q504 E	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Condenser (Polar type)
C518		Condenser (Non-polar type)

Others

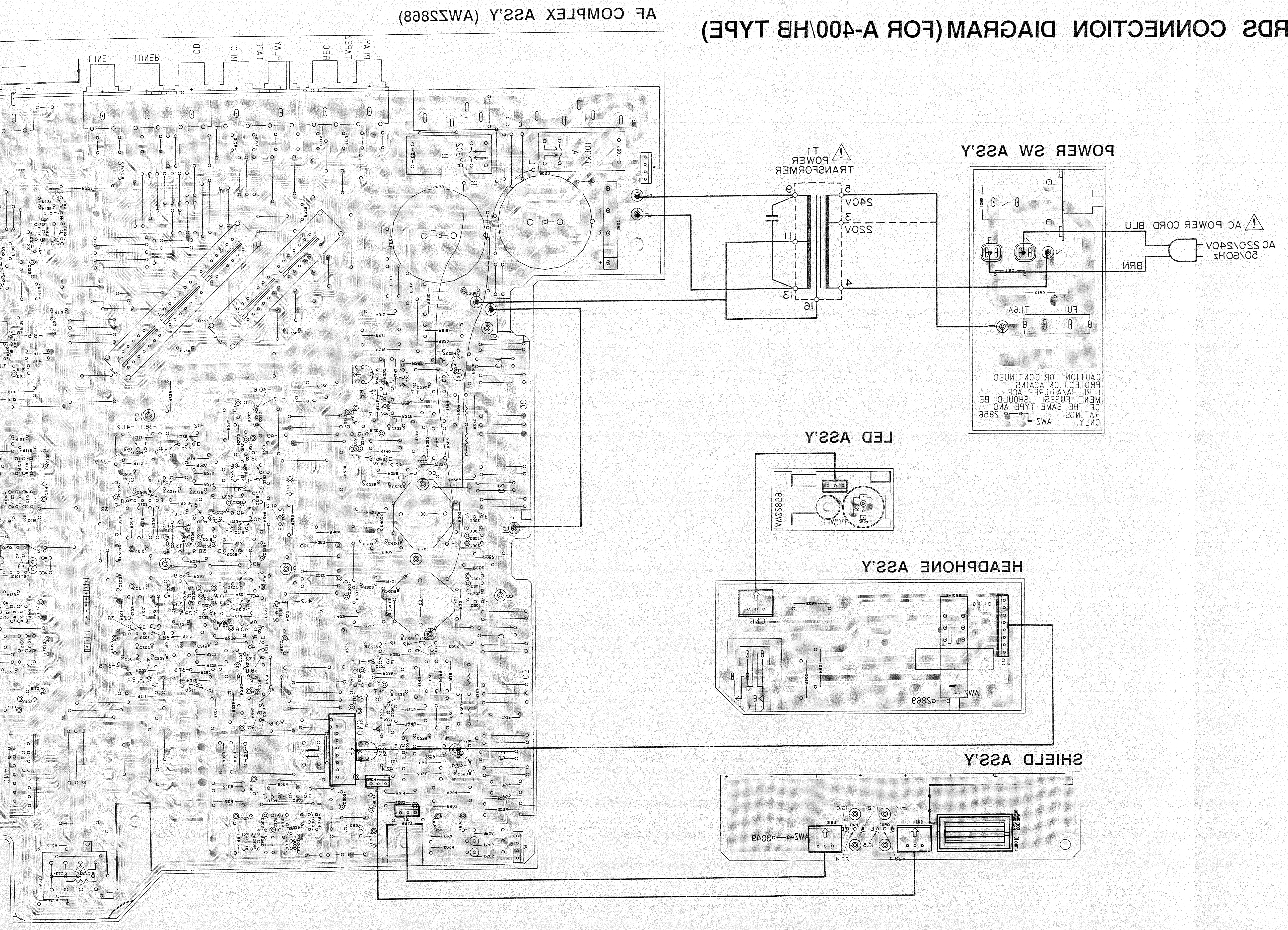
Wiring mark on the P.C.B pattern diagram	Parts list
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or semi-fixed resistor

3. The condenser terminal marked with double circles (◎) represents (–) terminal.
4. The diode terminal marked with double circles (◎) represents the cathode side.
5. The transistor terminal marked with "E" represents an emitter.

- View from soldering side


AF COMPLEX ASS'Y (AWZ2868)
IB TYPE)
LINE
TUNER
CD
REC
TAPE1
PLAY
REC
TAPE2
PLAY
PHONO SEL
VR202
VR201
ANP1968-B
AWZ
IC101
Q101
Q103
Q105
Q102
Q104
Q106

4.P.C. BOARDS CONNECTION DIAGRAM (FOR A-400/HB TYPE)


AF COMPLEX ASS'Y (AWZ2868)
LINE
TUNER
CD
REC TAPE1 PLAY
REC TAPE2 PLAY
RY01 A
RY02 B
POWER SW ASS'Y
T1 POWER TRANSFORMER
240V
220V
9
11
13
16
5
3
4
AC POWER CORD BLU
BRN
AC 220/240V 50/60Hz
FU1
T1.6A
CAUTION-FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,REPLACE-MENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
AWZ 2856
LED ASS'Y
AWZ2859
HEADPHONE ASS'Y
CN6
J9
AWZ 2869
SHIELD ASS'Y
CN10
CN11
AWZ 3049
CN5
A
B
C
D
1
2
3
4
5
6

- View from soldering side

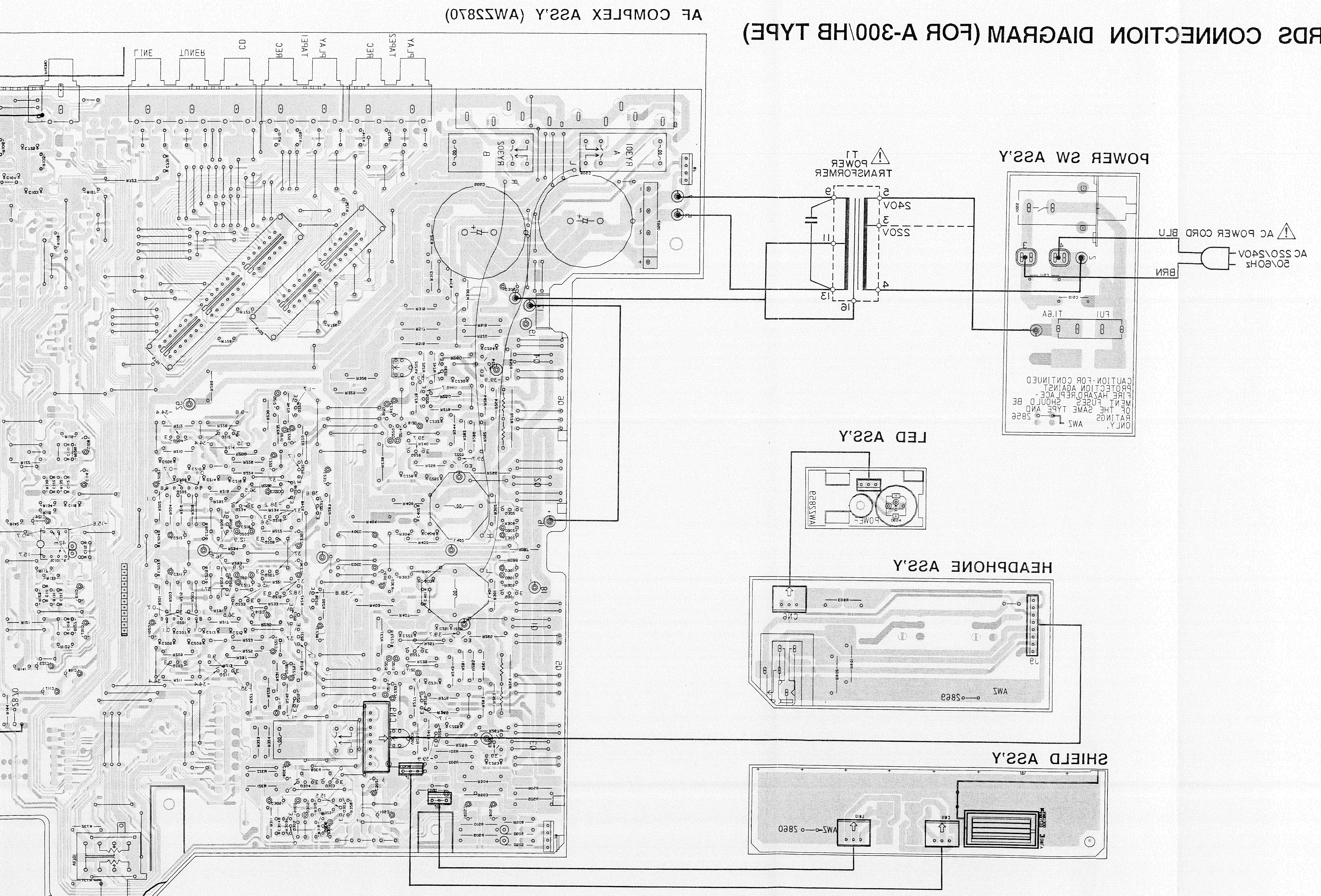
A

B

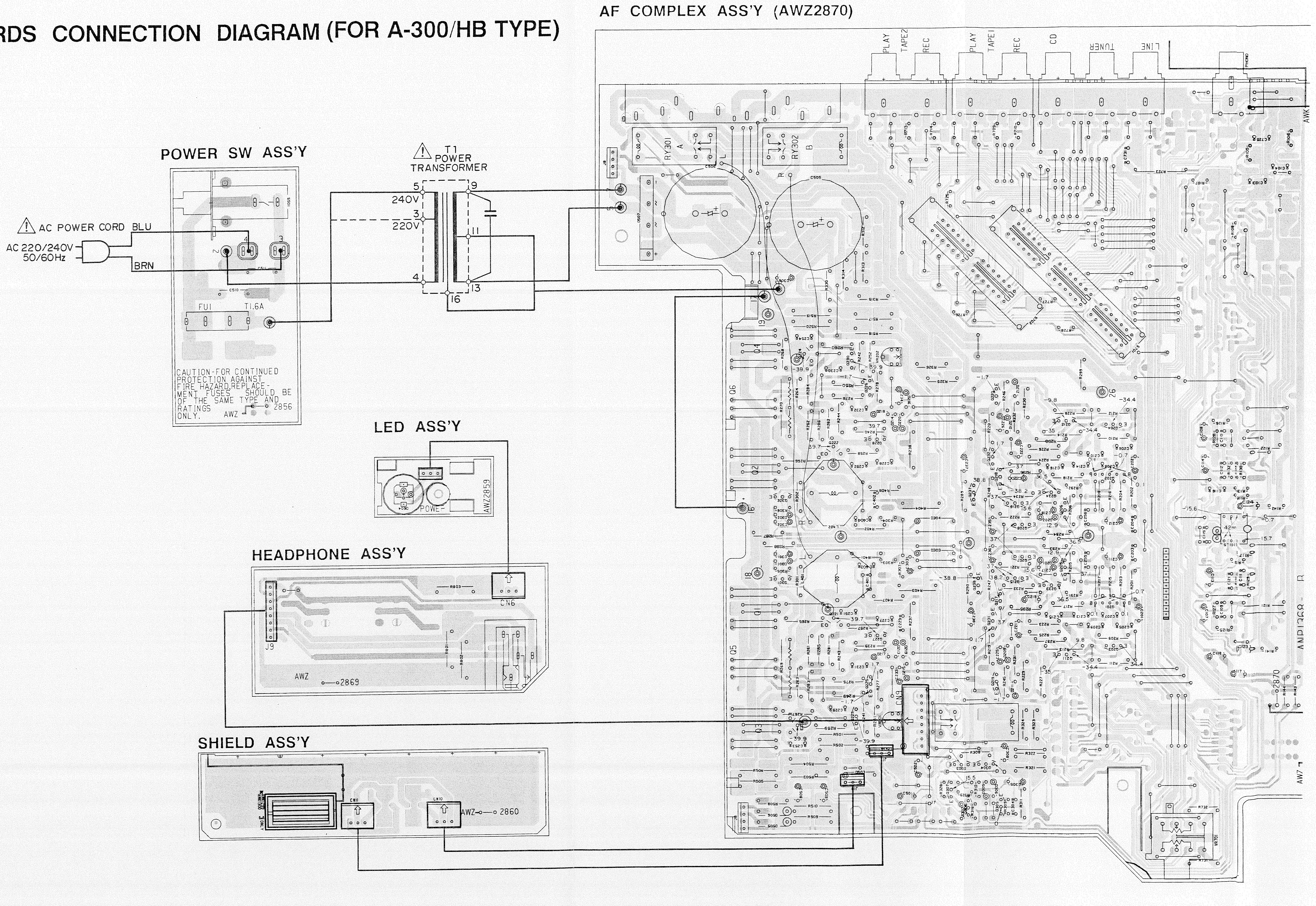
C

D

5. P.C. BOARDS CONNECTION DIAGRAM (FOR A-300/HB TYPE)

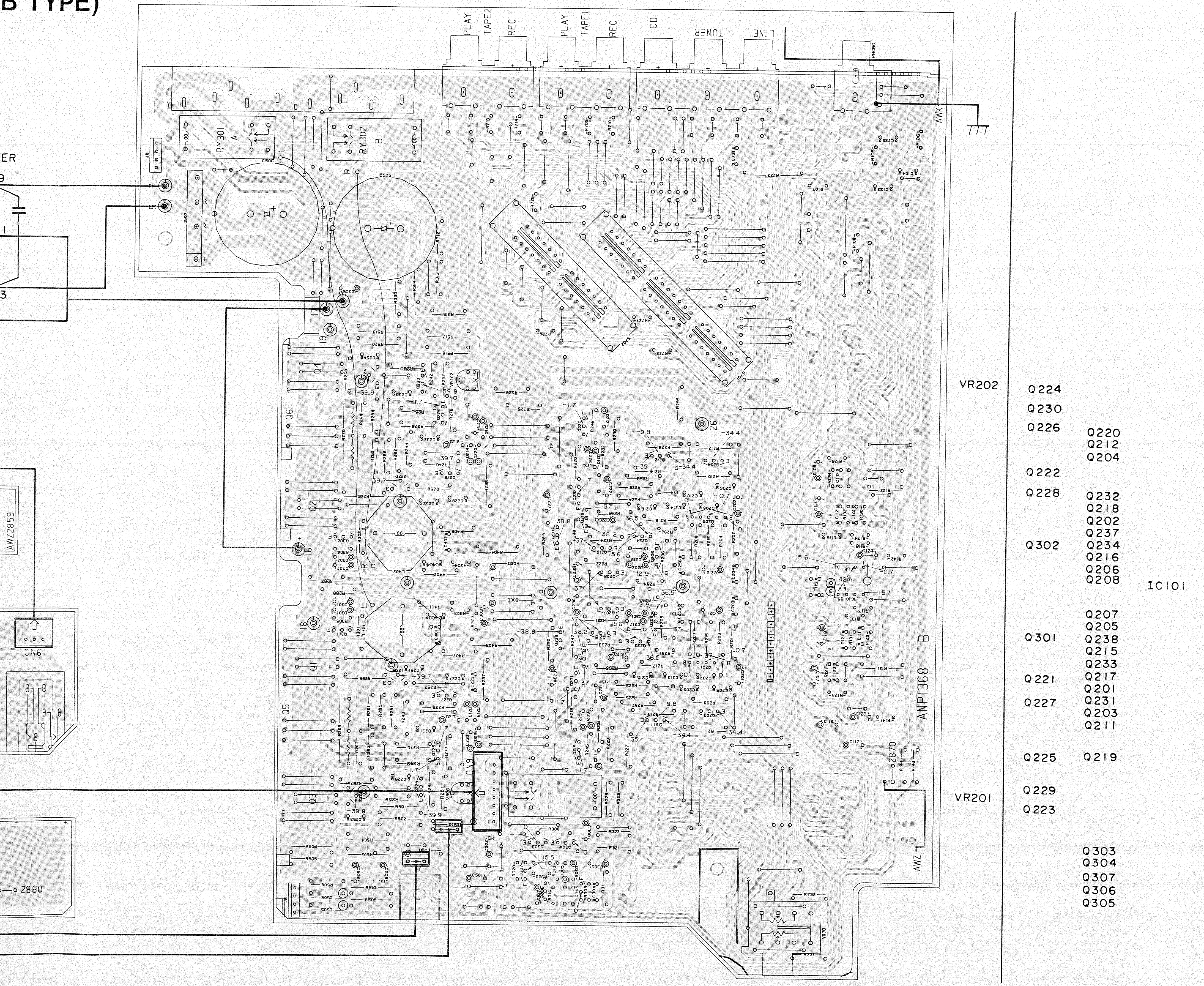

AF COMPLEX ASS'Y (AWZ2870)
LINE
TUNER
CD
REC
TAPE1
PLAY
REC
TAPE2
PLAY
RELAY B
RELAY A
T1 POWER TRANSFORMER
240V
220V
POWER SW ASS'Y
AC POWER CORD BLU
BRN
AC 220/240V 50/60Hz
T1.6A
FU1
CAUTION-FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,REPLACE-MENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
AWZ 2856
LED ASS'Y
AWZ2858
POWER
HEADPHONE ASS'Y
AWZ 2869
SHIELD ASS'Y
AWZ 2860

5. P.C. BOARDS CONNECTION DIAGRAM (FOR A-300/HB TYPE)


AF COMPLEX ASS'Y (AWZ2870)
PLAY
TAPE2
REC
PLAY
TAPE1
REC
CD
TUNER
LINE
PHONO
RY301 A
RY302 B
POWER SW ASS'Y
AC POWER CORD BLU
AC 220/240V 50/60Hz
BRN
FU1
T1.6A
CAUTION-FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,REPLACE-MENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
AWZ 2856
T1 POWER TRANSFORMER
240V
220V
5
3
4
9
11
13
16
LED ASS'Y
POWER
AWZ2859
HEADPHONE ASS'Y
J9
CN6
AWZ 2869
SHIELD ASS'Y
CN11
CN10
AWZ 2860
CN3
VR701

B TYPE)

AF COMPLEX ASS'Y (AWZ2870)


PLAY
TAPE2
REC
PLAY
TAPE1
REC
CD
TUNER
LINE
PHONO
AWK
RY301
A
RY302
B
C505
C506
ER
9
3
1
AWZ2859
CN6
CN9
2860
ANP1368-B
AWZ 2870
VR701
VR202
VR201
IC101
Q224
Q230
Q226
Q222
Q228
Q302
Q301
Q221
Q227
Q225
Q229
Q223
Q220
Q212
Q204
Q232
Q218
Q202
Q237
Q234
Q216
Q206
Q208
Q207
Q205
Q238
Q215
Q233
Q217
Q201
Q231
Q203
Q211
Q219
Q303
Q304
Q307
Q306
Q305

1. This P.C.B connection diagram is seen from the parts mount side.
2. The parts mounted on to the P.C.B can be replaced with those shown in the following correspondence table with wiring marks.

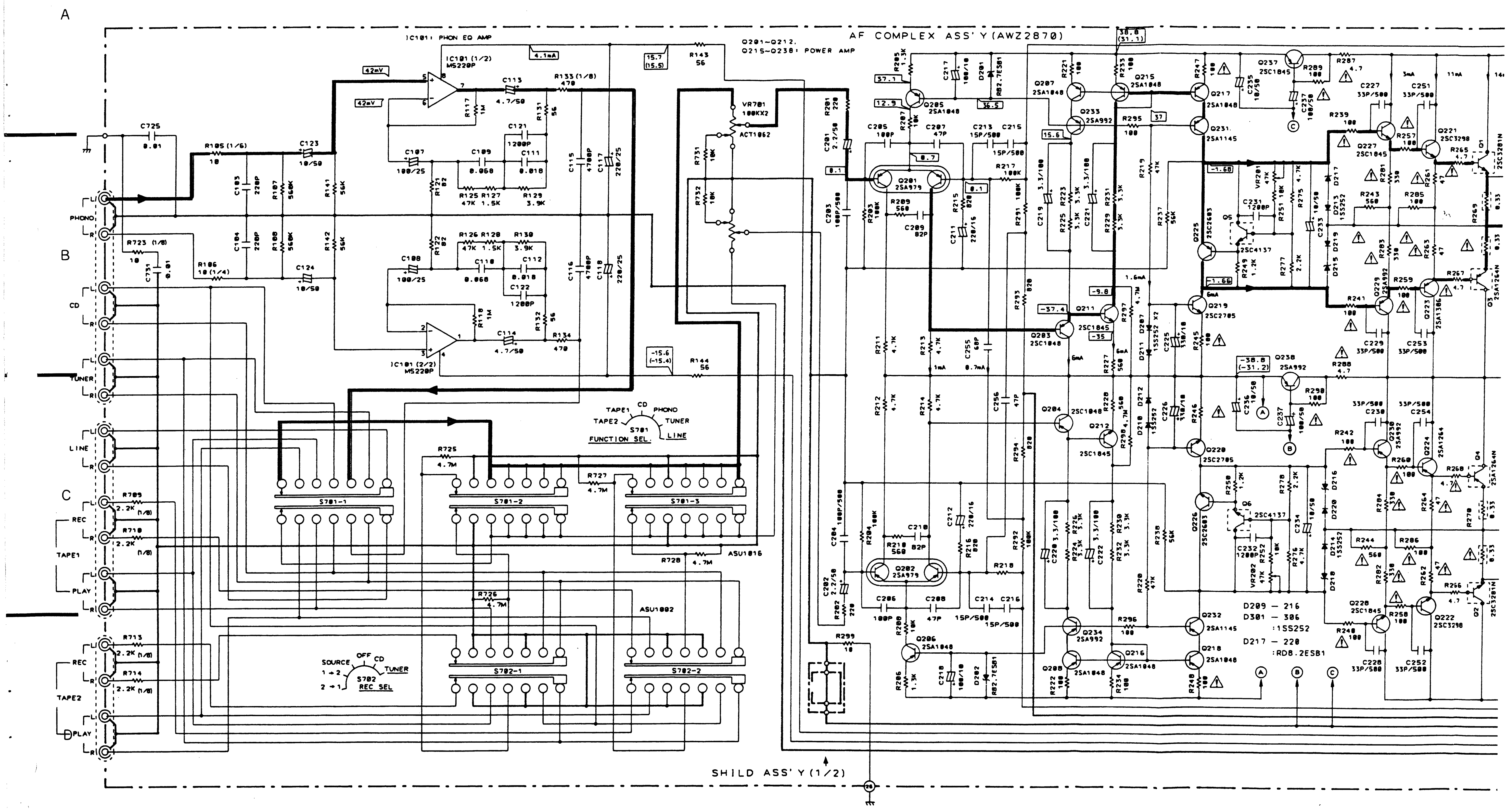
Indication of the P.C.B. pattern	Symbol of corresponding parts	Parts name
Q504 E	or E E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Condenser (Polar type)
C518		Condenser (Non-polar type)

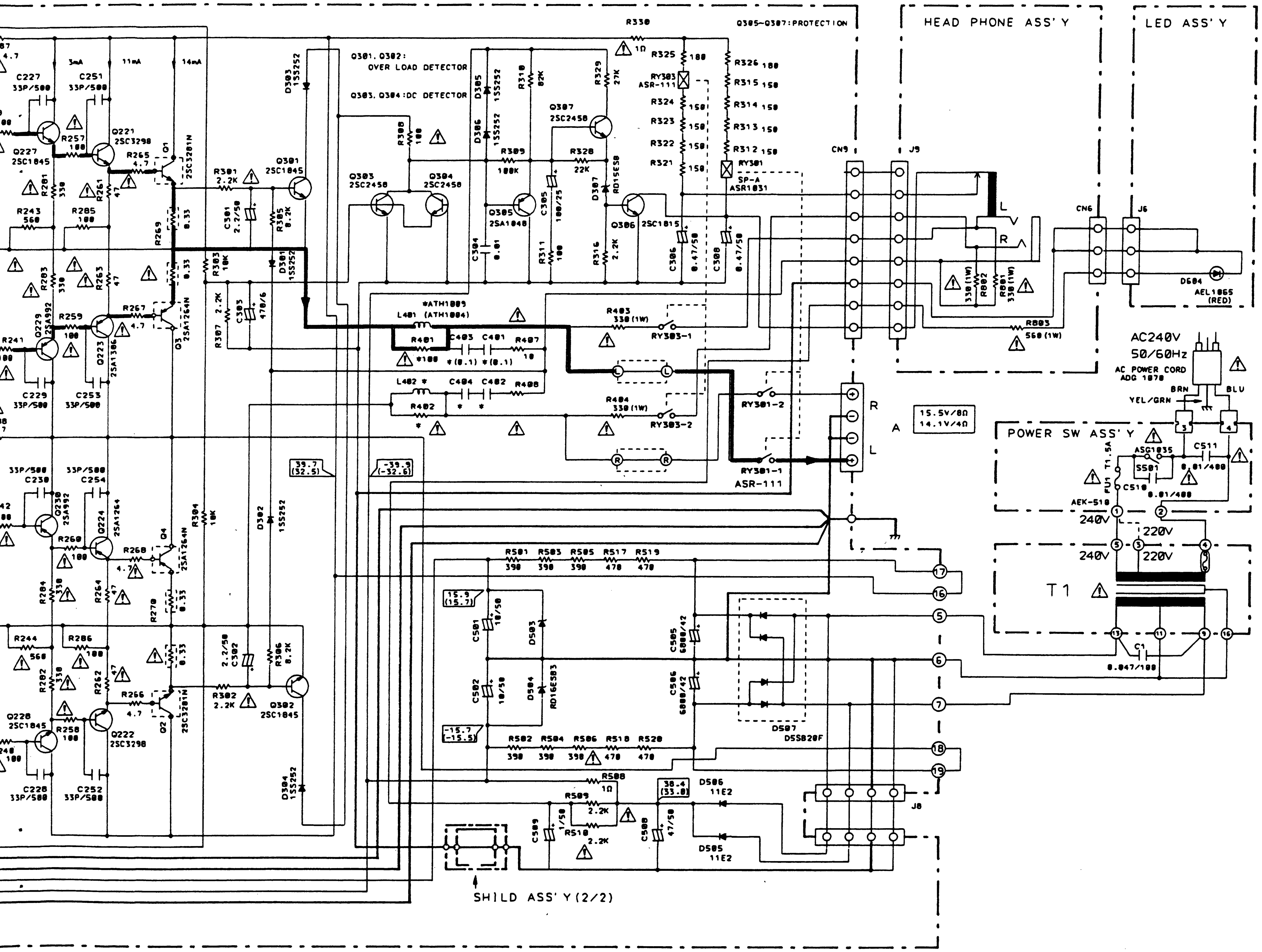
Others

Wiring mark on the P.C.B pattern diagram	Parts list
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or semi-fixed resistor

3. The condenser terminal marked with double circles (◎) represents (–) terminal.
4. The diode terminal marked with double circles (◎) represents the cathode side.
5. The transistor terminal marked with "E" represents an emitter.

6. SCHEMATIC DIAGRAM (FOR A-300/HB TYPE)


A
B
C
AF COMPLEX ASS'Y (AWZ2870)
IC101: PHON EQ AMP
IC101 (1/2) M5220P
IC101 (2/2) M5220P
Q201~Q212, Q215~Q238: POWER AMP
42mV
4.1mA
15.7 (15.5)
-15.6 (-15.4)
R143 56
R144 56
C725 0.01
R105 (1/6) 10
C123 10/50
C124 10/50
R106 10 (1/4)
R723 (1/8) 10
C731 0.01
C103 220P
C104 220P
R107 560K
R108 560K
R141 56K
R142 56K
C107 100/25
C108 100/25
C109 0.068
C110 0.068
C111 0.018
C112 0.018
C121 1200P
C122 1200P
C113 4.7/50
C114 4.7/50
R133 (1/8) 470
R134 470
R117 1M
R118 1M
R131 56
R132 56
R121 82
R122 82
R125 47K
R127 1.5K
R126 47K
R128 1.5K
R129 3.9K
R130 3.9K
C115 4700P
C116 4700P
C117 220/25
C118 220/25
VR701 100KX2
ACT1062
R731 10K
R732 10K
PHONO
CD
TUNER
LINE
REC
PLAY
TAPE1
TAPE2
R709 2.2K (1/8)
R710 2.2K (1/8)
R713 2.2K (1/8)
R714 2.2K (1/8)
R725 4.7M
R726 4.7M
R727 4.7M
R728 4.7M
S701-1
S701-2
S701-3
S702-1
S702-2
ASU1016
ASU1002
TAPE1 CD PHONO TAPE2 TUNER LINE
S701 FUNCTION SEL.
SOURCE OFF CD 1→2 2→1 TUNER
S702 REC SEL
SHILD ASS'Y (1/2)
R299 10
R205 1.3K
R206 1.3K
C217 100/10
C218 100/10
D201 RD2.7ESB1
D202 RD2.7ESB1
57.1
12.9
36.5
Q205 2SA1048
Q206 2SA1048
R207 10K
R208 10K
C205 100P
C206 100P
C207 47P
C208 47P
8.7
8.1
R201 220
C201 2.2/50
R202 220
C202 2.2/50
C203 100P/500
C204 100P/500
Q201 2SA979
Q202 2SA979
R203 100K
R204 100K
R209 560
R210 560
C209 82P
C210 82P
C211 220/16
C212 220/16
R215 820
R216 820
C213 15P/500
C214 15P/500
C215 15P/500
C216 15P/500
R217 100K
R218
R291 100K
R292 100K
R293 820
R294 820
R211 4.7K
R212 4.7K
R213 4.7K
R214 4.7K
C255 68P
C256 47P
1mA
0.7mA
6mA
1.6mA
Q203 2SC1048
Q204
Q207 2SA1048
Q208 2SA1048
Q211 2SC1845
Q212 2SC1845
R221 100
R222 100
15.6
-37.4
-35
-9.8
38.8 (31.1)
37
Q233 2SA992
Q234 2SA992
C219 3.3/100
C220 3.3/100
R223 3.3K
R224 3.3K
R225 3.3K
R226 3.3K
C221 3.3/100
C222 3.3/100
R229 3.3K
R230 3.3K
R231 3.3K
R232 3.3K
R233 100
R234 100
Q215 2SA1048
Q216 2SA1048
R295 100
R296 100
R297 4.7M
R298 4.7M
R227 560
R228 560
R219 47K
R220 47K
R237 56K
R238 56K
D207
D208
D211
D212
1SS252 X2
C225 330/10
C226 330/10
R247 100
R248 100
Q217 2SA1048
Q218 2SA1048
Q231 2SA1145
Q232 2SA1145
Q225 2SC2603
Q226 2SC2603
Q219 2SC2705
Q220 2SC2705
R245 100
R246 100
C235 10/50
C236 10/50
Q237 2SC1845
Q238 2SA992
R289 100
R290 100
C237 100/50
R287 4.7
R288 4.7
-1.68
-1.66
-38.8 (-31.2)
Q5 2SC4137
Q6 2SC4137
C231 1200P
C232 1200P
VR201 47K
VR202 47K
R249 1.2K
R250 1.2K
R251 10K
R252 10K
R277 2.2K
R278 2.2K
R275 4.7K
R276 4.7K
C233 10/50
C234 10/50
D213 1SS252
D214 1SS252
D215
D216
D217
D218
D219
D220
R239 100
R240 100
R241 100
R242 100
R243 560
R244 560
C227 33P/500
C228 33P/500
C229 33P/500
C230 33P/500
C251 33P/500
C252 33P/500
C253 33P/500
C254 33P/500
3mA
11mA
Q227 2SC1845
Q228 2SC1845
Q229 2SA992
Q230 2SA992
Q221 2SC3298
Q222 2SC3298
Q223 2SA1306
Q224 2SA1264
R257 100
R258 100
R259 100
R260 100
R201 330
R202 330
R203 330
R204 330
R261 47
R262 47
R263 47
R264 47
R265 4.7
R266 4.7
R267 4.7
R268 4.7
R285 100
R286 100
R269 0.33
R270 0.33
Q1 2SC3281N
Q2 2SC3281N
Q3 2SA1264N
Q4 2SA1264N
D209 — 216
D301 — 306
:1SS252
D217 — 228
:RD8.2ESB1
Ⓐ
Ⓑ
Ⓒ
⚠


Q301. Q302: OVER LOAD DETECTOR
Q303. Q304: DC DETECTOR
Q305–Q307: PROTECTION
HEAD PHONE ASS'Y
LED ASS'Y
POWER SW ASS'Y
SHILD ASS'Y (2/2)
AC240V 50/60Hz
AC POWER CORD ADG 1070
BRN
BLU
YEL/GRN
T1
240V
220V
S501
C511 0.01/400
C510 0.01/400
AEK-510
ASG1035
FU1 T1.5A
C1 0.047/100
CN9
J9
CN6
J6
J8
D604 AEL1065 (RED)
R803 560 (1W)
R801 330 (1W)
R802 330 (1W)
RY301 ASR1031
RY301-1 ASR-111
RY301-2
RY303 ASR-111
RY303-1
RY303-2
SP-A
L401 (ATH1004)
*ATH1005
L402
R401
R402
C403
C401
C404
C402
R407
R408
R403 330 (1W)
R404 330 (1W)
15.5V/8Ω
14.1V/4Ω
39.7 (32.5)
-39.9 (-32.6)
15.9 (15.7)
-15.7 (-15.5)
38.4 (53.0)
Q301 2SC1845
Q302 2SC1845
Q303 2SC2458
Q304 2SC2458
Q305 2SA1048
Q306 2SC1815
Q307 2SC2458
Q1 2SC3201N
Q2 2SC3201N
Q3 2SA1264N
Q4 2SA1264N
Q221 2SC3298
Q222 2SC3298
Q223 2SA1306
Q224 2SA1264
Q227 2SC1845
Q228 2SC1845
Q229 2SA992
Q230 2SA992
D301 1SS252
D302 1SS252
D303 1SS252
D304 1SS252
D305 1SS252
D306 1SS252
D307 RD15ESB
D503
D504 RD16ESB3
D505 11E2
D506 11E2
D507 DSS820F
C501 10/50
C502 10/50
C505 6800/42
C506 6800/42
C508 47/50
C509 1/50
R501 390
R503 390
R505 390
R517 470
R519 470
R502 390
R504 390
R506 390
R518 470
R520 470
R508 1Ω
R509 2.2K
R510 2.2K
R330 1Ω
R325 100
R326 100
R315 150
R314 150
R313 150
R312 150
R324 150
R323 150
R322 150
R321 150
R301 2.2K
R302 2.2K
R303 10K
R304 10K
R305 8.2K
R306 8.2K
R307 2.2K
C301 2.2/50
C302 2.2/50
C303 470/6
C304 0.01
C305 100/25
C306 0.47/50
C308 0.47/50
R308 100
R309 100K
R310 82K
R311 100
R316 2.2K
R328 22K
R329 27K
3mA
11mA
14mA
R
L
A

1. **RESISTORS:**
Indicated in Ω, 1/8, 1/4W, ±5% tolerance unless otherwise noted K; kΩ, M; MΩ, (F); ±1%, (G); ±2%, (K); ±10%, (M); ±20% tolerance.

2. **CAPACITORS:**
Indicated in capacity (μF) / voltage (V) unless otherwise noted p; pF. Indication without voltage is 50V except electrolytic capacitor.

3. **VOLTAGE CURRENT:**

V	;	Signal voltage at (30W + 30W/8Ω, 50W + 50W/4Ω) output (1kHz).
⌐	;	DC voltage (V) at no input signal. Value in ( ) is DC voltage at rated power.
mA	;	DC current (V) at no input signal.
mV	;	Signal voltage at FM 400Hz ± 75Hz DEV.

4. **OTHERS**
- ←; Signal route.
- ⊘; Adjusting point.
- The ※ mark found on some component parts indicates the importane of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- ⚠marked capacitor and resistor have parts number.
- This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. **SWITCHES (The underline indicates the switch position)**

S501	:	POWER SW (ON-OFF)
S701	:	FUNCTION SEL (TAPE 2 – TAPE 1 – CD – PHONO – TUNER – LINE)
S702	:	REC SEL (2→1 – 1→2 – SOURCE – OFF – CD – TUNER)

7. ELECTRICAL PARTS LIST

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 *When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).*
560Ω *56 ×* 10^1 *561*.......................... *RD1/4PS* $\boxed{5}\boxed{6}\boxed{1}$ *J*
47kΩ *47 ×* 10^3 *473*.......................... *RD1/4PS* $\boxed{4}\boxed{7}\boxed{3}$ *J*
0.5Ω *0R5*.. *RN2H* $\boxed{0}\boxed{R}\boxed{5}$ *K*
1Ω *010*.. *RS1P* $\boxed{0}\boxed{1}\boxed{0}$ *K*

Ex. 2 *When there are 3 effective digits (such as in high precision metal film resistors).*
5.62kΩ *562 ×* 10^1 *5621*........................ *RN1/4SR* $\boxed{5}\boxed{6}\boxed{2}\boxed{1}$ *F*

POWER SW ASS'Y

CAPACITORS

Mark	No.	Description	Parts No.
⚠	C510,C511	CKA (0.01/AC400V)	ACG1002

SWITCH

Mark	No.	Description	Parts No.
⚠	S501	PUSH SWITCH	ASG1035

LED ASS'Y

SEMICONDUCTOR

Mark	No.	Description	Parts No.
	D604	LED (RED)	AEL1065

SHIELD ASS'Y (FOR A-400/HB TYPE)

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	Q501	TRANSISTOR	2SC2705
	Q502	TRANSISTOR	2SA1145

OTHERS

Mark	No.	Description	Parts No.
	CN10,CN11	JUMPER CONNECTOR 3-P	KPC3

HEADPHONE ASS'Y

RESISTORS

Mark	No.	Description	Parts No.
⚠	R801,R802	METAL OXIDE RESISTOR	RS1PMF331J
⚠	R803	METAL OXIDE RESISTOR	RS1LMF681J

OTHERS

Mark	No.	Description	Parts No.
		JACK	AKN1022
	CN6	JUMPER CONNECTOR 3-P	KPC3

AF COMPLEX ASS'Y (AWZ2868) FOR A-400/HB TYPE

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC101	IC	UPC4570C
	Q101-Q104	N-FET	2SK369
	Q105,Q106	TRANSISTOR	2SC2458
	Q201,Q202	TRANSISTOR	2SA979
	Q203-Q208	TRANSISTOR	2SA1048
	Q211,Q212	TRANSISTOR	2SC1845
	Q215-Q218	TRANSISTOR	2SA1048
	Q219,Q220	TRANSISTOR	2SC2705
	Q221,Q222	TRANSISTOR	2SC3298
	Q223,Q224	TRANSISTOR	2SA1306
	Q225,Q226	TRANSISTOR	2SC2603
	Q227,Q228	TRANSISTOR	2SC1845
	Q229,Q230	TRANSISTOR	2SA992
	Q231,Q232	TRANSISTOR	2SA1145
	Q233,Q234	TRANSISTOR	2SA992
	Q237	TRANSISTOR	2SC1845
	Q238	TRANSISTOR	2SA992
	Q301,Q302	TRANSISTOR	2SC1845
	Q303,Q304	TRANSISTOR	2SC2458
	Q305	TRANSISTOR	2SA1048
	Q306	TRANSISTOR	2SC1815
	Q307	TRANSISTOR	2SC2458
	D101,D102	ZENER DIODE	RD7.5ESB2
	D103	DIODE	1SS252
	D201,D202	ZENER DIODE	RD2.7ESB1
	D209-D216	DIODE	1SS252
	D217-D220	ZENER DIODE	RD15ESB
	D301-D306	DIODE	1SS252
	D307	ZENER DIODE	RD22ESB
	D503,D504	ZENER DIODE	RD18ESB1
	D505,D506	DIODE	11E2
	D507	DIODE	D5SB20F

COILS & FILTERS

Mark	No.	Description	Parts No.
	L401,L402	COIL	ATH1004

CAPACITORS

Mark	No.	Description	Parts No.
	C101,C102	AUDIO FILM CAPACITOR	CFTXA103J50
	C103,C104	CERAMIC CAPACITOR	CCCSL221K500
	C105,C106	POLYESTER CAPACITOR	CQMXA472J100
	C107,C108	ELECTR. CAPACITOR	CEXA101M25
	C109,C110	AUDIO FILM CAPACITOR	CFTXA683J50
	C111,C112	AUDIO FILM CAPACITOR	CFTXA183J50
	C113,C114	ELECTR. CAPACITOR	CEXANP220M25
	C115,C116	POLYESTER CAPACITOR	CQMXA472J100
	C117,C118	ELECTR. CAPACITOR	CEXA221M25
	C121,C122	POLYESTER CAPACITOR	CQMXA122J100
	C135,C136	ELECTR. CAPACITOR	CEAS470M10
	C201,C202	ELECTR. CAPACITOR	CEEA2R2M50
	C203,C204	MICA CAPACITOR	CMA101J500
	C205,C206	CERAMIC CAPACITOR	CCCSL101J50
	C207,C208	CERAMIC CAPACITOR	CCCSL470J50
	C209,C210	CERAMIC CAPACITOR	CCCSL820J50
	C211,C212	ELECTR. CAPACITOR	CEEA221M16
	C213-C216	CERAMIC CAPACITOR	CCCSL150K500
	C217,C218	ELECTR. CAPACITOR	CEAS101M10
	C219-C222	ELECTR. CAPACITOR	CEAS3R3M100
	C225,C226	ELECTR. CAPACITOR	CEAS331M10
	C227-C230	CERAMIC CAPACITOR	CCCSL330K500
	C231,C232	CERAMIC CAPACITOR	CKCYB122K50
	C233-C236	ELECTR. CAPACITOR	CEAS100M50
	C237,C238	ELECTR. CAPACITOR	CEAS101M50
	C251-C254	CERAMIC CAPACITOR	CCCSL330K500
	C255	CERAMIC CAPACITOR	CCCSL680J50
	C256	CERAMIC CAPACITOR	CCDSL470J50
	C301,C302	ELECTR. CAPACITOR	CEAS2R2M50
	C303	ELECTR. CAPACITOR	CEAS471M6
	C304	CERAMIC CAPACITOR	CKCYF103Z50
	C305	ELECTR. CAPACITOR	CEAS101M25
	C306,C308	ELECTR. CAPACITOR	CEASR47M50
	C401-C404	AUDIO FILM CAPACITOR	CFTXA104J50
	C501,C502	ELECTR. CAPACITOR	CEAS100M50
	C503,C504	ELECTR. CAPACITOR	CEAS470M25
	C505	ELECTR. CAPACITOR (10000/5V)	ACH1152
	C506	ELECTR. CAPACITOR (10000/5V)	ACH1153
	C508	ELECTR. CAPACITOR	CEAS470M50
	C509	ELECTR. CAPACITOR	CEAS010M50
	C725	CERAMIC CAPACITOR	CKCYF103Z50
	C731	CERAMIC CAPACITOR	CKCYF103Z50
	C733,C734	CERAMIC CAPACITOR	CKDYF102Z50

RESISTORS

Mark	No.	Description	Parts No.
	VR201,VR202	SEMI-FIXED(47K)	ACP1045
	VR701	VARIABLE(100K-20AX2)	ACT1063
	R101,R102	CARBON FILM RESISTOR	RDR1/6PU101J
	R105-R108	CARBON FILM RESISTOR	RDR1/6PU□□□J
	R119-R122	CARBON FILM RESISTOR	RDR1/4PM□□□J
	R133,R134	CARBON FILM RESISTOR	RDR1/6PU391J
	R143,R144	CARBON FILM RESISTOR	RD1/4PM560J
	R201-R204	CARBON FILM RESISTOR	RDR1/4PM□□□J
	R205-R214	CARBON FILM RESISTOR	RD1/4PM□□□J
	R215-R218	CARBON FILM RESISTOR	RDR1/4PM□□□J
	R219-R234	CARBON FILM RESISTOR	RD1/4PM□□□J
	R237,R238	CARBON FILM RESISTOR	RDR1/4PM563J
⚠	R239-R242	FUSIBLE RESISTOR	RFA1/4PS101J
⚠	R243,R244	CARBON FILM RESISTOR	RD1/4PMF561J
⚠	R245-R248	FUSIBLE RESISTOR	RFA1/4PS101J
	R249-R252	CARBON FILM RESISTOR	RD1/4PM□□□J
⚠	R257-R260	FUSIBLE RESISTOR	RFA1/4PS101J
⚠	R261-R264	FUSIBLE RESISTOR	RFA1/4PS470J
⚠	R265-R268	FUSIBLE RESISTOR	RFA1/4PS4R7J
⚠	R269,R270	RESISTOR (0.33, 5W)	ACN1063
	R275-R278	CARBON FILM RESISTOR	RD1/4PM□□□J
⚠	R281-R284	FUSIBLE RESISTOR	RFA1/4PS331J
⚠	R285,R286	FUSIBLE RESISTOR	RFA1/4PS101J
⚠	R287,R288	CARBON FILM RESISTOR	RD1/4PMF4R7J
⚠	R289,R290	FUSIBLE RESISTOR	RFA1/4PS101J
	R299	CARBON FILM RESISTOR	RD1/4PM100J
⚠	R301,R302	CARBON FILM RESISTOR	RD1/4PMF222J
⚠	R308	CARBON FILM RESISTOR	RD1/4PMF101J
	R311-R315	CARBON FILM RESISTOR	RD1/4PM□□□J
	R321-R326	CARBON FILM RESISTOR	RD1/4PM□□□J
⚠	R330	CARBON FILM RESISTOR	RD1/4PMF010J
⚠	R401,R402	CARBON FILM RESISTOR	RD1/4PMFL100J
⚠	R403,R404	METAL OXIDE RESISTOR	RS1LMF331J
⚠	R407,R408	CARBON FILM RESISTOR	RD1/4PMFL100J
⚠	R501-R506	METAL OXIDE RESISTOR	RS1PMF121J
⚠	R507,R508	CARBON FILM RESISTOR	RD1/4PMF010J
⚠	R509,R510	METAL OXIDE RESISTOR	RS1LMF272J
	R513-R516	CARBON FILM RESISTOR	RD1/4PM272J
⚠	R517-R520	METAL OXIDE RESISTOR	RS1PMF101J
	R731,R732	CARBON FILM RESISTOR	RD1/4PM103J
		OTHER RESISTORS	RD1/8PM□□□J

SWITCHES

Mark	No.	Description	Parts No.
	S101	PUSH SWITCH	ASG1012
	S701	SWITCH	ASU1016
	S702	SWITCH	ASU1002

OTHERS

Mark	No.	Description	Parts No.
	CN9	JUMPER CONNECTOR	KPC8
	RY301	RELAY	ASR1031
	RY303	RELAY	ASR-111
		PHONO JACK 6-P	AKB1007
		PHONO JACK 6-P	AKB1008
		PHONO JACK 2-P	AKB1059
		SPEAKER TERMINAL 4-P	AKE1020

AF COMPLEX ASS'Y (AWZ2870) FOR A-300/HB TYPE

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC101	IC	M5220P
	Q201,Q202	TRANSISTOR	2SA979
	Q203-Q208	TRANSISTOR	2SA1048
	Q211,Q212	TRANSISTOR	2SC1845
	Q215-Q218	TRANSISTOR	2SA1048
	Q219,Q220	TRANSISTOR	2SC2705
	Q221,Q222	TRANSISTOR	2SC3298
	Q223,Q224	TRANSISTOR	2SA1306
	Q225,Q226	TRANSISTOR	2SC2603
	Q227,Q228	TRANSISTOR	2SC1845
	Q229,Q230	TR	
	Q231,Q232	TR	
	Q233,Q234	TR	
	Q237	TRANSIS	
	Q238	TRANSIS	
	Q301,Q302	TR	
	Q303,Q304	TR	
	Q305	TRANSIS	
	Q306	TRANSIS	
	Q307	TRANSIS	
	D201,D202	ZE	
	D209-D216	DI	
	D217-D220	ZE	
	D301-D306	DI	
	D307	ZENER	
	D503,D504	ZE	
	D505,D506	DI	
	D507	DIODE	

COILS & FILTE

Mark	No.	Description	Parts No.
	L401,L402	CO	

CAPACITORS

Mark	No.	Description	Parts No.
	C103,C104	CE	
	C107,C108	EL	
	C109,C110	AU	
	C111,C112	AU	
	C113,C114	EL	
	C115,C116	M	
	C117,C118	EL	
	C121,C122	M	
	C123,C124	EL	
	C201,C202	EL	
	C203,C204	C	
	C205,C206	C	
	C207,C208	C	
	C209,C210	C	
	C211,C212	EL	
	C213-C216	C	
	C217,C218	EL	
	C219-C222	E	
	C225,C226	EL	
	C227-C230	C	
	C231,C232	C	
	C233-C236	E	
	C237,C238	E	
	C251-C254	C	
	C255	CERAM	
	C256	CERAM	
	C301,C302	E	
	C303	ELECT	
	C304	CERAM	
	C305	ELECT	

Mark	No.	Description	Parts No.
	Q229,Q230	TRANSISTOR	2SA992
	Q231,Q232	TRANSISTOR	2SA1145
	Q233,Q234	TRANSISTOR	2SA992
	Q237	TRANSISTOR	2SC1845
	Q238	TRANSISTOR	2SA992
	Q301,Q302	TRANSISTOR	2SC1845
	Q303,Q304	TRANSISTOR	2SC2458
	Q305	TRANSISTOR	2SA1048
	Q306	TRANSISTOR	2SC1815
	Q307	TRANSISTOR	2SC2458
	D201,D202	ZENER DIODE	RD2.7ESB1
	D209-D216	DIODE	1SS252
	D217-D220	ZENER DIODE	RD8.2ESB1
	D301-D306	DIODE	1SS252
	D307	ZENER DIODE	RD15ESB
	D503,D504	ZENER DIODE	RD16ESB3
	D505,D506	DIODE	11E2
	D507	DIODE	D5SB20F

COILS & FILTERS

Mark	No.	Description	Parts No.
	L401,L402	COIL	ATH1004

CAPACITORS

Mark	No.	Description	Parts No.
	C103,C104	CERAMIC CAPACITOR	CCCSL221J50
	C107,C108	ELECTR. CAPACITOR	CEXA101M25
	C109,C110	AUDIO FILM CAPACITOR	CFTXA683J50
	C111,C112	AUDIO FILM CAPACITOR	CFTXA183J50
	C113,C114	ELECTR. CAPACITOR	CEXA4R7M50
	C115,C116	MYLOR FILM CAPACITOR	CQMA472K50
	C117,C118	ELECTR. CAPACITOR	CEAS221M25
	C121,C122	MYLOR FILM CAPACITOR	CQMA122J50
	C123,C124	ELECTR. CAPACITOR	CEXA100M50
	C201,C202	ELECTR. CAPACITOR	CEEA2R2M50
	C203,C204	CERAMIC CAPACITOR	CCCSL101K500
	C205,C206	CERAMIC CAPACITOR	CCCSL101J50
	C207,C208	CERAMIC CAPACITOR	CCCSL470J50
	C209,C210	CERAMIC CAPACITOR	CCCSL101J50
	C211,C212	ELECTR. CAPACITOR	CEEA221M16
	C213-C216	CERAMIC CAPACITOR	CCCSL150K500
	C217,C218	ELECTR. CAPACITOR	CEAS101M10
	C219-C222	ELECTR. CAPACITOR	CEAS3R3M100
	C225,C226	ELECTR. CAPACITOR	CEAS331M10
	C227-C230	CERAMIC CAPACITOR	CCCSL330K500
	C231,C232	CERAMIC CAPACITOR	CKCYB122K50
	C233-C236	ELECTR. CAPACITOR	CEAS100M50
	C237,C238	ELECTR. CAPACITOR	CEAS101M50
	C251-C254	CERAMIC CAPACITOR	CCCSL330K500
	C255	CERAMIC CAPACITOR	CCCSL680J50
	C256	CERAMIC CAPACITOR	CCDSL470J50
	C301,C302	ELECTR. CAPACITOR	CEAS2R2M50
	C303	ELECTR. CAPACITOR	CEAS471M6
	C304	CERAMIC CAPACITOR	CKCYF103Z50
	C305	ELECTR. CAPACITOR	CEAS101M25

Mark	No.	Description	Parts No.
	C306,C308	ELECTR. CAPACITOR	CEASR47M50
	C401-C404	AUDIO FILM CAPACITOR	CFTXA104J50
	C501,C502	ELECTR. CAPACITOR	CEAS470M25
	C505,C506	ELECTR. CAPACITOR (6800/42V)	ACH1077
	C508	ELECTR. CAPACITOR	CEAS470M50
	C509	ELECTR. CAPACITOR	CEAS010M50
	C725	CERAMIC CAPACITOR	CKCYF103Z50
	C731	CERAMIC CAPACITOR	CKCYF103Z50

RESISTORS

Mark	No.	Description	Parts No.
	VR201,VR202	SEMI-FIXED (47K)	ACP1045
	VR701	VARIABLE(100K-20AX2)	ACT1062
	R105,R106	CARBON FILM RESISTOR	RDR1/6PU100J
	R121,R122	CARBON FILM RESISTOR	RDR1/4PM820J
	R133,R134	CARBON FILM RESISTOR	RDR1/6PU471J
	R141,R142	CARBON FILM RESISTOR	RDR1/6PU563J
	R143,R144	CARBON FILM RESISTOR	RD1/4PM560J
	R201-R204	CARBON FILM RESISTOR	RDR1/4PM□□□J
	R205-R214	CARBON FILM RESISTOR	RD1/4PM□□□J
	R215-R218	CARBON FILM RESISTOR	RDR1/4PM□□□J
	R219-R234	CARBON FILM RESISTOR	RD1/4PM□□□J
	R237,R238	CARBON FILM RESISTOR	RDR1/4PM563J
⚠	R239-R242	FUSIBLE RESISTOR	RFA1/4PS101J
⚠	R243,R244	CARBON FILM RESISTOR	RD1/4PMF561J
⚠	R245-R248	FUSIBLE RESISTOR	RFA1/4PS101J
	R249-R252	CARBON FILM RESISTOR	RD1/4PM□□□J
⚠	R257-R260	FUSIBLE RESISTOR	RFA1/4PS101J
⚠	R261-R264	FUSIBLE RESISTOR	RFA1/4PS470J
⚠	R265-R268	FUSIBLE RESISTOR	RFA1/4PS4R7J
⚠	R269,R270	RESISTOR (0.33, 5W)	ACN1063
	R275-R278	CARBON FILM RESISTOR	RD1/4PM□□□J
⚠	R281-R284	FUSIBLE RESISTOR	RFA1/4PS331J
⚠	R285,R286	FUSIBLE RESISTOR	RFA1/4PS101J
⚠	R287,R288	CARBON FILM RESISTOR	RD1/4PMF4R7J
⚠	R289,R290	FUSIBLE RESISTOR	RFA1/4PS101J
	R299	CARBON FILM RESISTOR	RD1/4PM100J
	R301,R302	CARBON FILM RESISTOR	RD1/4PMF222J
	R308	CARBON FILM RESISTOR	RD1/4PMF101J
	R311-R315	CARBON FILM RESISTOR	RD1/4PM□□□J
	R321-R326	CARBON FILM RESISTOR	RD1/4PM□□□J
	R330	CARBON FILM RESISTOR	RD1/4PMF010J
	R401,R402	CARBON FILM RESISTOR	RD1/4PMFL100J
	R403,R404	METAL OXIDE RESISTOR	RS1LMF331J
	R407,R408	CARBON FILM RESISTOR	RD1/4PMFL100J
	R501-R506	CARBON FILM RESISTOR	RD1/2PM□□□J
	R508	CARBON FILM RESISTOR	RD1/4PMF010J
	R509,R510	METAL OXIDE RESISTOR	RS1LMF222J
	R517-R520	CARBON FILM RESISTOR	RD1/2PM471J
	R731,R732	CARBON FILM RESISTOR	RD1/4PM103J
	OTHER RESISTORS		RD1/8PM□□□J

SWITCHES

Mark	No.	Description	Parts No.
	S701	SWITCH	ASU1016
	S702	SWITCH	ASU1002

OTHERS

Mark	No.	Description	Parts No.
	CN9	JUMPER CONNECTOR	KPC8
	RY301	RELAY	ASR-111
	RY303	RELAY	ASR-111
		PHONO JACK 4-P	AKB1007
		PHONO JACK 6-P	AKB1008
		PHONO JACK 2-P	AKB1059
		SPEAKER TERMINAL 4-P	AKE1020

SHIELD ASS'Y (FOR A-300/HB TYPE)

No parts supplied with the SHIELD Ass'y.

8. ADJUSTMENT

ADJUSTMENT OF IDLE CURRENT

1. Connect wire as shown in Fig. 8-1.
2. After power ON, aging lasts for 5 mins with no-load.
3. In the Lch VR201 should be adjusted so that both terminal voltages of R269 may attain to 20 mV (±3 mV).
4. In the Rch VR202 should be adjusted so that both terminal voltages may attain to 20 mV (±3 mV).

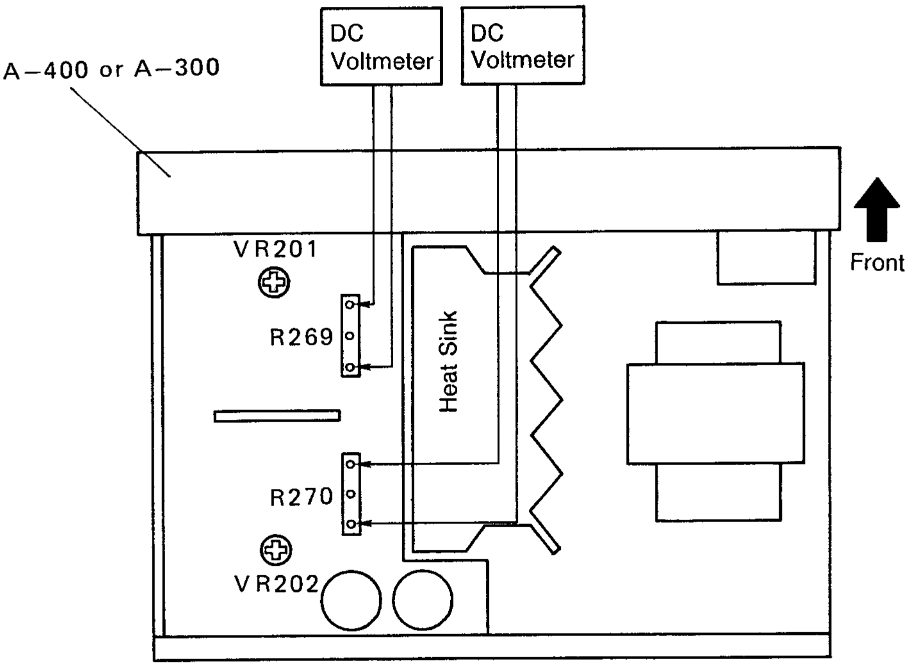

DC Voltmeter
DC Voltmeter
A–400 or A–300
Front
VR201
R269
Heat Sink
R270
VR202

Fig. 8-1 Adjustment Drawing

8. RÉGLAGE

RÉGLAGE DU COURANT DÉWATTÉ

1. Brancher les fils comme indiqué dans la fig. 8-1.
2. Après la mise sous tension, le moteur dure 5 minutes et n'introduire charge.
3. VR 201 sera réglé dans le canal gauche de manière que les deux tensions de bornes de R269 atteignent 20 mV (± 3 mV).
4. VR 202 sera réglé dans le canal droit de manière que les deux tensions de bornes atteignent 20 mV (± 3 mV).

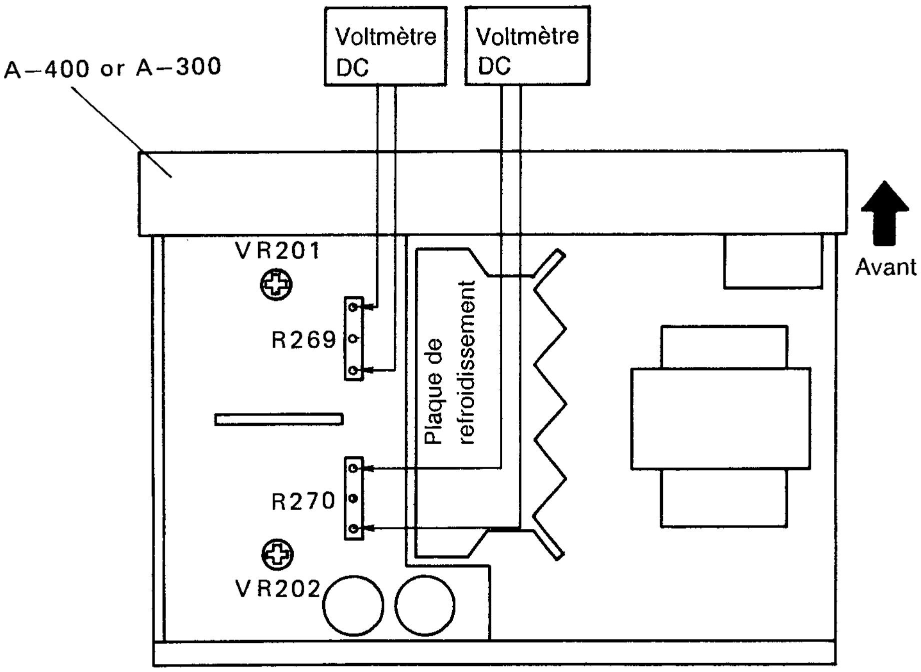

A–400 or A–300
Voltmètre DC
Voltmètre DC
Avant
VR201
R269
Plaque de refroidissement
R270
VR202

Fig. 8-1 Schéma du réglage

8. AJUSTE

AJUSTE DE LA CORRIENTE DEVATIADA

1. Conecte el cable como lo ilustra la Fig. 8-1.
2. El motor funciona por 5 mintos después de encender la unidad, sin introduzca.
3. El VR201 del canal izquierdo debe ajustarse de modo que la tensión entre ambos bornes de R269 llegue a 20 mV (±3 mV).
4. El VR202 del canal derecho debe ajustarse de modo que la tensión entre ambos bornes llegue a 20 mV (±3 mV).

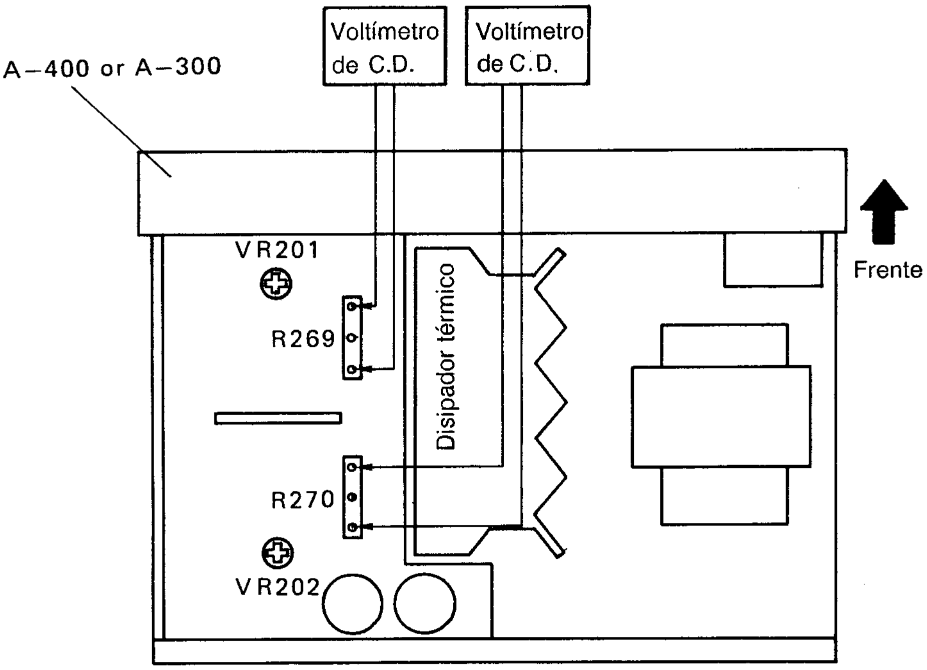
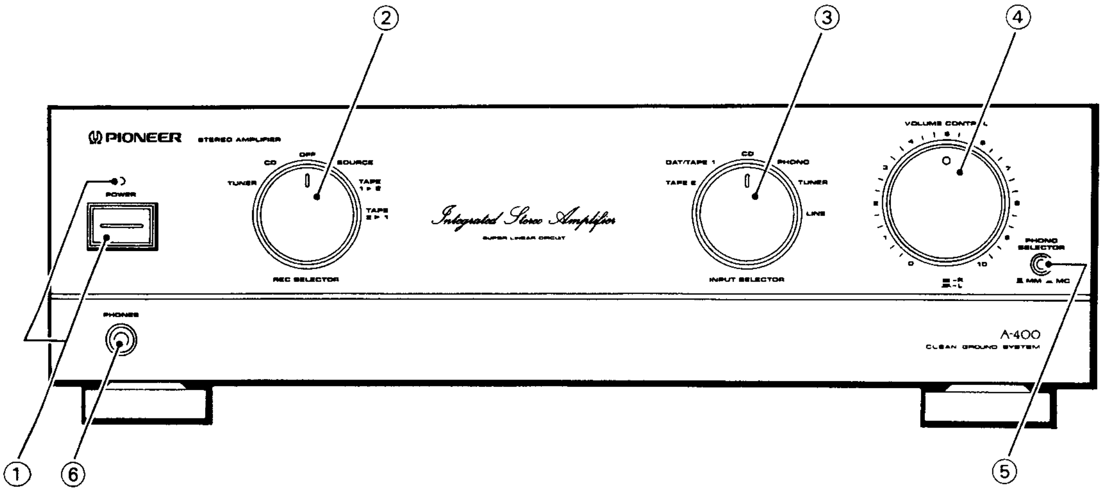

A–400 or A–300
Voltímetro de C.D.
Voltímetro de C.D.
VR201
R269
Disipador térmico
Frente
R270
VR202

Fig. 8-1 Diagrama de ajuste

9. FRONT PANEL FACILITIES

[FRONT PANEL]

The illustration shows model A-400.



① POWER switch/indicator

Press to turn power to the unit on and off.
When the power is on, the indicator lights.

② REC SELECTOR switch

When this switch is set to a position other than SOURCE or OFF, the equipment selected by REC SELECTOR switch can be recorded from, irrespective of the settings of INPUT SELECTOR and DIRECT switches.

TUNER:
To record from the equipment connected to TUNER terminals.

CD:
To record from the equipment connected to CD terminals.

OFF:
In this position, nothing from the REC terminals of DAT/TAPE 1 and TAPE 2 is output. Set to this position when not recording; the cassette deck will be disconnected, improving sound quality.

SOURCE:
To record from the equipment selected by INPUT SELECTOR switch.

TAPE 1 ► 2:
To record (copy) from the cassette deck of DAT/TAPE 1 terminals, to the cassette deck of TAPE 2 terminals.

TAPE 2 ► 1:
To record (copy) from the cassette deck of TAPE 2 terminals, to the cassette deck of DAT/TAPE 1 terminals.

③ INPUT SELECTOR switch

Use to select the playback source.

LINE:
For playback with a component connected to LINE terminal.

TUNER:
For AM or FM broadcast reception with a tuner.

PHONO:
For record playback with a turntable.

NOTE:

- *With the A-300, you can use an MM cartridge or a high-output MC cartridge (over 1 mV).*
- *According to the type of cartridge used with the A-400, you can select MM or MC with the PHONO SELECTOR switch.*

CD:
For compact disc playback with a CD player.

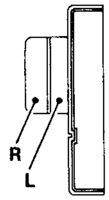
DAT/TAPE 1:
For playback with a cassette deck or digital audio tape deck connected to DAT/TAPE 1 terminals.

TAPE 2:
For playback with a cassette deck connected to TAPE 2 terminals.

④ VOLUME CONTROL

Use to adjust the volume level.
This volume knob consists of two volume controls. Because you can adjust L (left) and R (right) channel volume levels independently, it also functions as a balance control.

[Example]
To raise R (right) channel volume level, prevent the L knob from turning with one hand, and turn the R knob with the other hand.



⑤ PHONO SELECTOR switch (A-400 only)

Set in accordance with the type of cartridge used with your turntable.

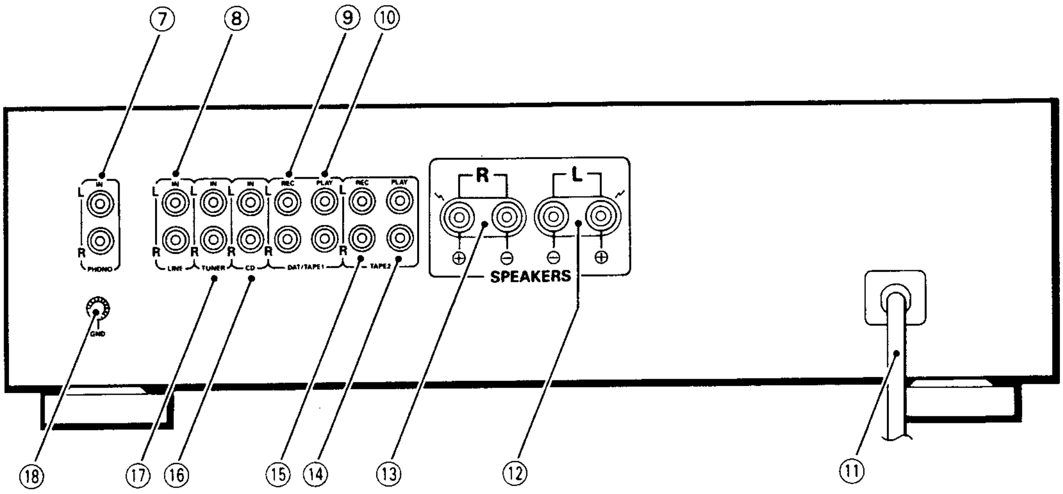
MM (■):
Set to this position when using a moving magnet cartridge, or a moving coil cartridge with a high output of 1 mV or more.

MC (▄):
Set to this position when using a moving coil cartridge.

⑥ PHONES jack

When using headphones, insert the plug into this jack. The output to the speakers is cut automatically when connecting headphones.

[REAR PANEL]


⑦
⑧
⑨
⑩
IN
L
R
PHONO
IN
IN
IN
REC
PLAY
REC
PLAY
LINE
TUNER
CD
DAT/TAPE1
TAPE2
R
L
⊕
⊖
⊖
⊕
SPEAKERS
GND
⑱
⑰
⑯
⑮
⑭
⑬
⑫
⑪

⑦ **PHONO terminals**

⑧ **LINE terminals**

⑨ **DAT/TAPE 1 REC terminals**

⑩ **DAT/TAPE 1 PLAY terminals**

⑪ **Power cord**

Connect this cord to an AC wall socket, or the AC outlet of an audio timer.

⑫ **SPEAKERS terminals L (left channel)**

⑬ **SPEAKERS terminals R (right channel)**

⑭ **TAPE 2 PLAY terminals**

⑮ **TAPE 2 REC terminals**

⑯ **CD terminals**

⑰ **TUNER terminals**

⑱ **Turntable ground terminal (GND)**